THE FARMERS' REGISTER.

VOL. IX. MAY 31, 1841. No. 5.

EDMUND RUFFIN, EDITOR AND PROPRIETOR.

PRIZE ESSAY.

From the Kentucky Farmer.

The undersigned have examined the essay on tobacco, submitted to them by the Kentucky State Agricultural Society, and award the premium to that signed "A. Beatty."

JOHN CALHOON,
JOHN H. McHENRY.
JAMES F. BUCKNER.
THOS. TOWLES, JR.

Dec. 31, 1840.

—

AN ESSAY ON THE CULTIVATION OF TOBACCO.*

The first step in the process of tobacco culture is to make provision for an abundant supply of plants. Tobacco seed are very small, and the plants, when they first spring from the ground, grow very slowly, and would soon be smothered by weeds if not carefully guarded against. The places selected for plant beds should be such as would not be likely to produce many weeds. New ground, or that which has been long set in grass, would be best for this purpose. To guard still further against weeds, and to ensure a thrifty growth of plants, it is essential that the place in which the seed are to be sown should be burnt. A light burning with straw or other light material will not be sufficient. A good coat of brush laid upon the ground intended to be used for a plant bed, and arranged so closely as to make it burn readily, serves best for the purpose. Care must be taken also, before laying on the brush, to rake all trash from the ground, so that the heat may readily destroy the seeds of any weeds which may have been deposited there. New ground is always to be preferred for plant beds, and brush as the material for burning the ground. But if the tobacco planter have no new ground, then he must substitute grass land in its stead, and this should be well burned by having a range of logs (those which are seasoned answer best) laid along one edge of the ground intended for a plant bed, and heaped up sufficiently to make them burn readily. These must be set on fire, and after burning the ground which they cover sufficiently, they must be moved by means of hooks, to the adjacent ground not yet burnt; and so on, in succession, until the entire space intended for a plant bed is burnt. If one set of logs is not sufficient to burn a space as large as will be necessary, others must be added so as to enlarge the space, or they may be burnt at different places as may be most convenient.

Where sod ground is intended to be used, it would be advantageous to have the sod lightly skinned off with sharp hoes, before the space is burnt over.

After the ground is burnt it must stand sufficiently long to cool, and then the ashes should be carefully removed. The ground should now be dug up with hoes, to the depth of two or three inches, and so as to pulverize it as much as possible; and should be well raked with an iron tooth rake, so as to break up the soil into the most minute parts. It will now be ready for sowing the seed. It is important that this operation should be as regular as possible; and care should be taken to put the proper quantity of seed upon the ground. If sowed too thick, the plants will be so much crowded as to injure their growth. If sowed too thin, a deficiency of plant may be the consequence. A common silver table spoonful of seed will be sufficient for fifty square yards. More than that quantity should not be sowed on that space of ground. But if the ground prepared be abundant, the plants would grow more thrifty by sowing a spoonful of seed on seventy or eighty square yards. The seed allotted for a particular bed should be put into a vessel half filled with fine mould or earth, and stirred so thoroughly as to cause the seed to be equally distributed in all its parts. It should now be separated into two equal divisions. And the plant bed having been divided into convenient lands for sowing, one portion should be sowed as equally as possible in one direction, and the other portion in the same bed, in the opposite direction. The plant bed should now be well raked with an iron tooth rake, both ways, and should then be well trodden by the feet of men or boys, so as to render the loose soil firm and compact. The bed should be thinly covered over with brush to keep it moist and to protect the plants from frost. Plant beds should be prepared and sown as early in February as the weather will admit; though it will be in good time if sown any time in that month.

Tobacco requires a rich soil, and that which is new or nearly so, answers best. Next to ground which has been recently cleared, lands which have been long in grass, especially if pastured by sheep, answers best for tobacco. In preparing ground for tobacco, great care should be taken to plough it deep, and pulverize it completely. Grass land intended for tobacco, should always be ploughed the previous fall. And it is better that all kinds of land intended for that purpose, should be ploughed in time to have the benefit of the previous winter frosts. It should be kept light and free from weeds, by repeated ploughings, till near the time of planting. It should then be laid off into ridges, by a single horse plough,

* For this essay a premium was awarded by the Agricultural Society of Kentucky. The friend to whom we were much indebted recently, for the notes to an essay on the same subject from Maryland, speaks of this one as follows:

"This essay on tobacco I consider very valuable. It is apparent, however, that the management of the crop for market is not such as would be approved amongst our best planters in Virginia. The different qualities are not separated, but are "prized" up together—short and long, rich and thin, dark and bright, are put into the same hogshead. This evidently injures the sale of the better qualities, and does not much enhance the value of the inferior."

(to prevent the ridges from being trodden by the off horse) from three to three and a half feet from centre to centre, according to the kind of tobacco which is intended to be planted. The ground should be crossed at the same distance, by a shovel plough or one with a double mould board. The ground will now be in a condition, requiring nothing more to be done to prepare for the planting, but to cut off the centre of the square or ridge with a broad hoe. This last operation should be performed when the plants are of sufficient size for setting, and should be made only so many at a time as there will be plants to fill the first *season* that happens. Plants can only be set after a rain, and much care should be taken in this operation, for if plants are well set they will grow quickly, but if badly set they will be kept back some time, and many hills will require to be replanted. This will cause much additional labor and render the crop irregular as to the time of ripening. When the crop is planted its cultivation must be carefully attended to. The first thing to be done is to see that the cut worms do not destroy the young plants. These must be sought after and destroyed. The plants must be kept free from weeds. In this operation both the plough and hoe should be used until the plants become too large to use the former without breaking the leaves. During the last ploughing, tobacco should be ploughed only during the heat of the day, when the leaves will have *wilted* and will not easily break.

Tobacco is very subject to be injured by the horn worm. This insect is very destructive, and if not destroyed will ruin the crop. The utmost care is, therefore, required from an early period of its growth, to save the tobacco crop. From the time the horn worm makes its appearance the crop should be gone over once a week till it is cut. *Topping* and *priming* are next to be attended to. The latter consists in breaking off the leaves next to the ground, which, to the number of four or five, are of no value. The number of leaves to which tobacco should be topped, varies according to the kind of tobacco raised, and the season of topping. The *first* topping will always admit of a greater number of leaves being left; and, in proportion as the season advances, fewer leaves should be left. The heavier kinds of tobacco are generally topped early in the season, to twelve leaves, then to ten, and still later to eight. The lighter kinds of tobacco are topped to a greater number of leaves. The above rule is only applicable to a rich soil. If the soil is light, the topping should be regulated accordingly, and fewer leaves left.

Suckering is a much more tedious operation. Every plant requires to be twice suckered before it is ready for cutting. The first suckers are of quick growth, and should be removed before they become large, otherwise they will not only injure the growth of the plants, but will sometimes break off the leaves in removing them.

Tobacco is usually planted from the middle of May to the last of June. And the cutting season usually commences about the middle of August, and is rarely finished until late in September. Between the planting and cutting of tobacco, the labor of attending to it is light, but very tedious. It requires more hands than any other crop, for the same number of acres; but weak hands and children can assist and do much of the work. When it begins to ripen, stouter hands are required, though children may still aid in the subsequent operations. A little practice will enable the planter to distinguish, very readily, the ripe from the green plants. At the first cutting the former must be selected and cut, leaving the others to become riper. When tobacco is ripe the leaves become spotted, with a greenish yellow color, and the leaves are so thick and ridged that by folding and pressing them gently between the thumb and finger, they will break or crack. But a little experience will enable the planter to determine which plants are ripe by *sight* alone. Tobacco must be split while standing; and such hands as can readily distinguish between the ripe and green plants, should be employed in the splitting process. The most convenient knife for splitting tobacco is in form somewhat like a broad chisel, except that the blade should be very thin. It should be three and a half inches wide, and of the same length, having attached to it a thin spear or shank, to be inserted in a handle about a foot long, having a cross piece on the top, to be held by the hand. After the spear is inserted in the handle, the latter should be shaved flat on two sides, to prevent the end of the handle next the spear from striking against the top of the tobacco stalk as the knife is run down. With this instrument a skilful operator can split the standing plants with great rapidity. They should not be split nearer to the ground than six inches. The cutter may follow immediately after the splitter or at any convenient time afterwards. A common hemp hook is the best instrument for cutting tobacco. The cutting season is a critical time for the tobacco crop. It is subject to a variety of casualties; and without particular care, is liable to sustain great and irreparable injury. It is subject to be *bruised* in handling, to be *sun burned*, and to be greatly injured by *heating* if suffered to lie too long in large heaps. Each of these will most materially injure the crop, and they must all be guarded against with the utmost vigilance. The first is the most difficult to be guarded against, when tobacco is cut in very warm weather. After it is cut, it *must* lie long enough to fall or *wilt*, so as to become sufficiently pliant to handle without *breaking* or *bruising* the leaves. The hotter the weather the more difficult it is to accomplish this object without exposing the plants to the deteriorating effects of being *sun burned*. It is surprising how quickly this takes place, when tobacco is exposed to the meridian rays of the sun, in the month of August, or early in September. The parts of the leaves which are *sun burned* turn white and soon become dry and crisp; and when cured, assume a green color. The parts thus affected are completely ruined, having lost all the qualities of good tobacco. To guard against this casualty, when tobacco is cut early in the season the operation should be performed in the morning or so late in the evening that the sun will not have power enough to injure it. Cutting, both in the morning and evening, may be practised as convenience may dictate, and may be managed as follows. The planter may commence cutting in the morning, taking care to cut only so much as he can secure before the sun has acquired sufficient power to injure it. When the cutting is completed and the plants have fallen sufficiently, he should com-

mence piling it in heaps with the buts towards the sun, taking care to handle the plants gently, holding them by the buts, and avoiding any pressure upon the leaves. By handling them thus, and laying them as lightly as possible in heaps, this process may be performed before the tobacco has completely fallen. The heaping should always commence with the plants first cut so that they may as nearly as practicable, be exposed to the sun's rays an equal portion of time, or in equal degree, and should so progress till the whole is heaped. The stems of the tobacco are the last parts that *wilt*. Being large and ridged, these require more sun to make them fall, and hence the necessity of placing the buts towards the sun when heaping tobacco. Being thus placed, the stems continue to be affected by the sun, while the plants are lying in heaps. The heaping of tobacco in some degree protects it from being *sun burned*, but the uncovered leaves are, of course, unprotected. Hence the necessity of hauling the tobacco to the place of hanging it as soon as possible after it has fallen sufficiently to admit of this being done without bruising or breaking off the leaves. Sleds are the most convenient vehicles for transporting tobacco to the scaffold or house where it is to be hung, if near at hand. These should have smooth plank on the bottom, to prevent the leaves of the tobacco from being torn or bruised. There should be no standards in the sleds, and the tobacco should be laid on in two courses, the tails lapped and buts out on each side. When unloaded, the buts should all lie towards the sun, unless the hanging is performed in the shade of a house or trees. These precautions are all for the purpose of preventing the tobacco from being sun burned. If the cutting take place late in the season, or when the weather is cool, they will not be necessary.

Planters who are largely engaged in the culture of tobacco, will be under the necessity of raising it at a considerable distance from the place of housing it. In that case sleds will not be convenient for transporting it, and it would be a much better plan to have a wagon coupled so as to hold a very long body, and sufficiently high to hang the tobacco, after being put on sticks, across the body. The sticks should be filled with the appropriate number of plants, in the field where it grew, and put at once into the wagon, pressing them as close together as possible without bruising the leaves. This will protect the plants from becoming sun burned, and when the wagon arrives at the place of housing it, the tobacco may at once be transferred to the place where it is to be cured. It would be most convenient to have two wagons, so that one may be filled in the field while the other is hauling and discharging its load, and returning. So, also, if there be hands enough, the smaller ones may be heaping the tobacco, while others are engaged in putting it on sticks, and conveying it to the place of housing it. If the tobacco house be so constructed as to admit the wagons to pass through the centre, additional facilities will be furnished for transferring the tobacco to the place where it is to be cured.

Tobacco plants may be split during the heat of the day, without injury. It is only liable to be *sun burned* after it is cut. And hence the splitting process may progress, while part of the hands are engaged in hanging that which was cut in the morning. When the afternooon has so far progressed that tobacco may safely be cut without the risk of sun burning, (which is usually about four or five o'clock in August, and somewhat earlier in September,) the cutting process should commence, and be completed as soon as possible, so as to give time for the plants to fall sufficiently to be handled the same evening, or the next day, before the sun has attained sufficient power to injure them. The first cutting of the afternoon in the early part of the season, can usually be hauled and hung the same evening. That part of it which has not fallen sufficiently to be handled without bruising or breaking, should be suffered to lie in the field, without heaping, till the next day.

It is usual, when there is not time to hang all the tobacco during the same evening it is cut, to let a part of it lie over till morning to be hung while the dew is drying off that in the field. This may be done to advantage if hauled on sleds, provided care be taken to prevent it from heating during the night. If suffered to lie in large heaps, it will be greatly injured in the course of one night. To guard against this casualty, it should be spread in long rows not more than three or four plants deep, when the weather is very warm. In cool weather the danger of heating is not so great. A little experience will teach the tobacco planter to guard against the casualty of which I have been speaking. It is very important that this should be done, as it is completely ruinous to so much of the tobacco as may become heated to a high degree, as it will do if suffered to lie in large heaps over night.

There are two modes of treating tobacco when it is cut, one is to hang it on scaffolds, exposed to the weather; the other is to hang it at once in suitable houses.

The former method must, of necessity, be resorted to where there is a scarcity of house room. By hanging sometime on a scaffold, the tobacco commences curing and can be stowed much closer in houses than it can be, with safety, when first cut. But it is subject to serious disadvantages. Those parts which are exposed to the sun are liable to be sun burned, and much of it may, therefore, be injured on the scaffold. Another injury, and a most material one, is, that if suffered to remain on the scaffold till the leaves begin to cure, they are liable to be injured by the dews which fall every night; and still more by a rain, if one should happen to fall. If the tobacco is *housed* from the scaffold before it begins to cure, not much is gained in point of room, when stowed in the tobacco house. If suffered to hang on the scaffold till partly cured, it may be much injured by rains and dews.

The safest way, therefore, is to put it in houses or under sheds, as soon as it is cut. But here again care must be taken to avoid another casualty, that of being *house burned*. It is stated in the Farmer's Guide, page 265, that if it is intended "to cure by fire, the tobacco is carried immediately from the field to the house, hung on sticks, as before described, and these sticks crowded as close together on the tier as they can possibly be, so as to exclude all air from the tobacco. It remains in this situation until the leaves of the plants become yellow, or of the color of hickory leaves just before they fall. This will generally

happen in four or five days, when the sticks must be spread and placed at their proper distances in the house." There never was a greater error than that contained in the above extract. Tobacco thus housed, would be completely ruined long before the five days should have elapsed. If intended to be cured without fire, the house should be as open as possible for the free admission of air. The sticks on which the tobacco is hung should be placed from eight to twelve inches apart, according to the size of the tobacco, so that the air could circulate freely between the ranges of sticks. It should be continued in this open order until the tobacco is partially cured, when it may be rehung in much closer order, so as to make room for the later cutting. If hung in open sheds, with tight roofs, so much the better, so that the rain is prevented from beating in on the tobacco, which may be done by setting up fence rails or rough plank against the open sides of the shed.

If intended to be cured by fire, the house should be rendered as tight as possible, in all parts, except the roof, through which the smoke must escape. But instead of being crowded together, as recommended in the extract given above, it should have space enough to prevent the plants on the different sticks from *pressing hard* against each other, after the tobacco has completely fallen. Instead of suffering the tobacco to hang four or five days before fire is put under it, the house should be filled *as soon as possible*, and fire put under it *immediately*, to prevent the danger of house burning. For the first few days the fire should be moderate, till the *edges* of the leaves turn of a yellow color. The fires should then be gradually raised and the house kept sufficiently warm to cure the tobacco in a few days. In making kite-foot tobacco, the rule is, I believe, that the tobacco, stalk and all, must be cured in forty-eight hours from the time the fires are *raised*, which, as I have already remarked, must be when the leaves *begin* to turn yellow around their edges. After thus commencing to change color the entire leaf very soon assumes a beautiful yellow hue, and the object is to cure it before it turns to a nutmeg brown. If the curing is not *very speedy*, it will, or a great part of it, change to the latter color before the operation is completed.

The next thing to be done, after the tobacco is housed and cured, is *stripping*. This must be delayed till the *stem* as well as the leaf of the tobacco is thoroughly cured. Stripping can only be performed when tobacco is in such high *case* as to render the stems perfectly pliable, or at least such a portion of them as will supply a sufficient quantity of *tying leaves*, that is, leaves to tie the tobacco in *hands*. To perform this operation neatly, the stem of the leaf with which the hand is tied should be soft and pliant. As seasons for stripping are precarious, whenever tobacco, after being sufficiently cured, comes into *case*, a quantity for future stripping should be taken down, and packed in close bulk, with the tails in the centre and the buts of the stalks out. This bulk should be enclosed by the walls of the house on two or three sides, and plank on the other, and should be well stuffed all around between the enclosure and buts, so as to exclude the air. Thus packed away, tobacco will remain in *case* for a long time, but care must be taken not to pack it down when in too damp order, otherwise it will go through a heat, and be greatly injured, unless it be stripped out in the course of a few days. If put down in proper order, it may be stripped out at leisure, provided it is not packed in bulk before the weather has become cool, say November or December. When stripped and tied in hands it must be put in bulk, lapping the tails in the middle and leaving the heads all on the outside of the bulk, so that they can become thoroughly dry. If not in too *high order* when put in bulk, as above directed, it may be suffered to remain till February, when it should be hung on sticks, the hands as close as they can be conveniently placed to each other without pressing them together, and hung in the tobacco house, leaving the sticks so far apart as to admit the air to circulate between them. In this situation the tobacco will become thoroughly dry in a few days. It must be left hanging until a rain shall again bring it *in case*, it will be observed that the *leaf*, in contradistinction to the *stem*, will first come *in case*, whilst the stem will be found still dry and brittle. This is precisely the order in which tobacco should be, when it is to be finally bulked down for market or *prising* in hogsheads.

It should now be put down in a very large bulk, which may include the planter's entire crop. The number of courses may be six, eight, or any larger number, and the whole should be enclosed by the walls of the house and plank, and closely surrounded and covered with soft straw, so as perfectly to exclude the air. In this condition it may be kept for any length of time, and will be ready at all times for hauling to market in the *hand* or *prising*. One precaution only will be necessary. When the cover of the bulk is taken off for the purpose of taking out a part of the tobacco for prising or sale, the entire course or courses, on the top, should be taken off smoothly, and the cover carefully replaced. This is necessary to prevent the top of the bulk from becoming too dry. When *prising* in the summer, some elder bushes may be spread over the bulk to keep the tobacco damp. Tobacco prepared as herein directed, may be kept any number of years in bulk, or may be transferred to hogsheads and kept for any length of time, not only without injury, but will constantly improve by age.

It should be remarked, that to make tobacco of a very superior quality, great care should be taken when the stripping process is going on, to separate all the injured or defective leaves from the prime tobacco. To this end every plant should pass through the hands of a good judge of tobacco, who should *cull* out all the injured and defective leaves, which should be kept and sold separately. The balance of the leaves may be stripped and tied by small hands, who are not skilled in the quality of tobacco. As many persons should be employed in *culling* as may be necessary to furnish employment to all the less skilful hands. Sometimes, especially in kite foot tobacco, three different qualities should be made.

I have now gone through the entire process of tobacco culture, in which I have endeavored to include every thing which can be of *practical* use to the tobacco planter; and have gone as much into detail as will enable him, with a little practice and the exercise of a sound judgment, to understand and apply the whole process to the best advantage.

It is usual to plant tobacco on our rich Kentucky soil, for several years in succession, on the same ground. Tobacco is an exhausting crop, and ought not, too frequently, to be planted on the same ground. Experience will soon show when the crop should be changed. When it becomes necessary to do so, tobacco should be followed by a wheat crop, and the wheat sowed thickly with clover the following spring. The clover crop should be continued for at least two or three years, and then should have a coat of manure in the fall, and be ploughed in, and suffered to lie till spring, when it would again be in good condition for tobacco. A. BEATTY.

BEST TIME FOR CUTTING TIMBER.

From the New Genesee Farmer.

We suppose another age must pass away before the notion of *lunar influence* on timber will be entirely exploded. When the yielding mind of childhood receives a wrong impression from a parent or perceptor and it is allowed to *harden* for years before philosophy attempts to efface it, argument too often glances off like water from a goose's back.

On what does this notion rest? Why the moon raises tides on the ocean. Admitted; but on what else is its influence felt? If it has not *room enough* to raise tides on our lakes, can it possibly raise tides of sap in the pores of a tree, where a microscope is necessary to discover them?

But if it did raise the sap, what advantage could we derive from that knowledge? It would raise tides every day; and no one particular time would be better than another.

It has been handed down to us as a rule worthy of remembrance, that "the old of the moon in February is the best time to cut timber." But why is the *old* of the moon better than the *new*? This question might puzzle a Philadelphia lawyer. The "old of the moon" may come on the first day of the month; or it may come on the last—it may differ a whole month. The sap may be frozen, and the moon not able to stir a particle. Or can it act on solids as well as fluids? If it can act on frozen timber, why not on seasoned timber, or solid rock? We cannot understand such occult principles. We admit indeed that the time prescribed may serve well for cutting *some* kinds of timber; but certainly it is not the *best* time to cut *all* kinds of timber.

We believe it may be laid down as a maxim that *timber is most durable if cut when it contains the least sap*; and we have no knowledge that sap ever runs from a tree in full leaf. On a former occasion we stated a fact from an observant neighbor, that basswood rails, which he cut when the sap was in full flow, rotted before they seasoned, though immediately laid up in a fence. On the reverse, we have several instances of timber cut in summer that proved very durable, with not one case to the contrary. We therefore infer that the gradation from the best time to the worst is in the following order: summer—autumn—winter. No timber should be cut in the spring before the tree is in full leaf.

Physiologists, when treating of the functions of plants, have been too fond of drawing general rules, like other people, from a few observations. Because the sap of *some* trees flows not in winter, they have erroneously concluded it was so with *all*. The sap of the sugar maple, however, flows as soon as the leaves drop in autumn; therefore, to have that timber durable, it should be cut when the tree is in leaf; and as every leaf is employed in pumping out the moisture, it might be well to let the tree lie untrimmed till they are withered.

A timber tree may be very valuable or otherwise, according to the time of cutting it; and in this country where they are growing scarcer every year, it is more especially important to have the best information on the subject.

DIFFERENT EFFECTS OF NITRATE OF SODA.

From the Farmers' Magazine.

As there appears to be much diversity of opinion, whether nitrate of soda is beneficial or not in its effects when applied to land, and many varying results after its application, I am induced to send you an account of some trials I have made during the present year; I do this more readily, as it is only by an accumulation of facts that any general conclusions can be arrived at. I distributed the nitrate of soda broadcast on the 27th of April, it was very hot and dry, no rain had fallen for a month previously; the quantity of the saline employed was 1½ hundred weight to the acre; it was applied to spring tares, oats, barley, beans, peas, clover and wheat. The wheat succeeded partly fallow-land, and partly clover-ley. The nature of the soil on this farm is a stiff heavy deep clay. No perceptible difference took place in any of the crops to which the nitrate was applied until after the rain had fallen, which occurred in a fortnight; after this that portion of the wheat which was manured with the soda (and the year before was preceded by a clover-ley) quickly became more luxuriant in growth and darker in color, the same effects were developed on the young clover that was salted; on none of the other crops could I perceive the slightest benefit from the application of the nitrate. The stetches of clover land wheat to which the soda was applied, were reaped by themselves, an equal number to which it was not applied were also reaped; on thrashing each quantity, it was found the manured portion yielded one-fourth more grain, one-third more straw than the other, but the sample was not so plump, nor its color so good, the straw was not so bright. The same plan was not followed with the other crops to which the salt was distributed, as upon the most diligent investigation at harvest, not the slightest difference between these and the other portions of the fields could be perceived. In the months of June and July, I applied the nitrate to mangel, Swedes and white turnips; no benefit followed.

In offering to you the conclusion I arrive at from these results, I beg to say, I only throw it out as a hint for other investigators, and for my own farther research, for nothing can be more dangerous to the advance of knowledge than drawing sweeping general conclusions from few and isolated facts.

It appears to me, that nitrate of soda on the

heavy lands of this district, is only useful to crops which have succeeded a clover-ley, and to young clovers. Should the future experience of others agree with my own, it at once points out the fields to which in a season it ought to be applied, and may remove some of the conflicting opinions regarding its value as a manure.

OSWALD COPLAND.

Grove hall, Tolleshunt Knights, Essex.

NITRATE OF SODA.

From the Farmers' Magazine.

On the 25th of April last, I sowed a ridge in a field of wheat with nitrate of soda, 1½ cwt. per acre, the ridge adjoining with saltpetre, 1 cwt. 14 lbs. per acre, the ridges on each side of them receiving no manure; the same plan was adopted on the same day in another wheat field. The field No. 1, is a gravelly soil; No. 2, a wet sand, both were fallowed the preceding year. The following is the result:—

No. 1.

	Produce per acre.			Increase per acre.			W'ght. per B.
	Bush.	Gall.	Qrts.	Bush.	Gall.	Qrts.	lbs.
Without manure	22	2	–	–	–	–	62¼
Dressed with soda	26	3	1	4	1	1	62¾
Petre dressed with salt	25	5	1	2	3	–	62¾
Without manure	23	2	1	–	–	–	62½

No. 2.

	Produce per acre.			Increase per acre.			W'ght. per B.
	Bush.	Gall.	Qrts.	Bush.	Gall.	Qrts.	lbs.
Without manure	18	–	1	–	–	–	61½
Dressed with soda	28	2	3	10	2	2	62¼
Petre dressed with salt	26	3	–	7	4	1	61½
Without manure	18	6	3	–	–	–	60½

I remain, very faithfully yours, a friend to

AGRICULTURAL IMPROVEMENT.

IMPORTANT DISCOVERY—HOW TO RENDER WOOD IMPERISHABLE AND INCOMBUSTIBLE.

From the New Genesee Farmer.

Messrs. Editors:—A discovery of the highest importance appears to have been made in France, by which the long-sought preservation of wood from ordinary decay, combustion, &c., is finally achieved. This has been done by introducing into the wood itself, through the agency of vegetable life, the substances which contribute to these important ends.

It has, indeed, been long known to amateur botanists, that the flowers of house plants, &c., may be colored by the introduction of coloring matter into the organization of the plants; and that the flavors of fruits may sometimes be injured or destroyed by liquids poured upon the ground, at the root of the tree, at the season of their ripening, which are subsequently imbibed into the vegetable circulation. But these isolated facts have hitherto remained with their possessors, without any useful suggestions having been drawn from them, like a multitude of other scientific truths, which only require to be *applied to the arts*, to produce the most important results of usefulness to mankind.

The announcement of this discovery comes to us under circumstances which leave little doubt of its truth. The discoverer having submitted his results to the Academy of Sciences, of Paris, a commission was named from that highly scientific body, to investigate the subject, and make a report thereon. In the hope of usefulness, I have made a translation of this report, (omitting some portions, as irrelevant to my purpose,) for your paper, which I subjoin; deeming it highly important that experiments should be extensively made, the ensuing summer, in conformity with the discoverer's process, as shown in the report. It would be no trifling result to secure timber, in all situations, from decay, and our buildings from conflagration, at a cost so trifling as to be within the reach of all.

A physician of Bordeaux, Mons. Boucherie, has arrived at the all-important result of rendering the tissue of wood almost entirely unattackable by those causes of destruction to which it is ordinarily subject; and at the same time his processes render it much more suitable to the various purposes to which it is applicable in the arts.

A commission of the Academy of Sciences, at Paris, having been named, to examine the subject, Mons. Dumas, in the name of the commission, made in December last the following report, as the result of its investigations:

"The Academy has charged Messrs. Arago, de Mirbel, Poncelet, Gambey, Audoin, Boussaingault, and myself, with the examination of the Memoir of Mons. Boucherie, relative to the preservation of wood, the following is the result of our labors:

"The Academy has already examined, with the most lively interest, the preparations of the author; and it has before it, at this moment, pieces of these so remarkable that the task of its commission is thereby greatly abridged. Mons. Boucherie proposes to render wood much more durable, to preserve its elasticity, to prevent the variations in volume which it experiences through the agencies of dry and humid atmospheres, to diminish its combustibleness, to augment its tenacity and its hardness; and, finally, to communicate to it various and durable colors and odors.

"To assume that all these exigencies have been satisfied, and that this has been accomplished by methods, cheap, simple and new; and consummated through the agency of substances that are common, and which bear but a low price, is to fix the attention of the Academy, in a few words, upon the important features of the subject we are charged to examine.

"For the purpose of penetrating an entire tree

with preservative, coloring, or other matter, the author has recourse to no mechanical, costly or complicated means; he finds all the force of which he has need, in that process, within the tree itself,—the same force by which its own sap is elevated and distributed through its various parts. This, alone, suffices to convey from the base of the trunk to the very leaves all the liquids which he wishes to introduce, provided that these are maintained within certain limits of chemical concentration. If a tree be felled, while in full sap and leaf, and the base of the trunk be at once plunged in a vat or reservoir containing the liquid which it is desired the timber shall imbibe, that liquid, in the space of a few days, will ascend to the very leaves, and penetrate every part of the vegetable tissue, except the heart of the tree, which, in some instances of great age and hardness, or imperfect vitality, resists the absorption, and is not penetrated.

"It is not entirely necessary that the tree shall retain all its branches and leaves during this process, although it is important that those of the extreme top should remain uninjured.

"It is not important that the tree shall remain standing during the operation, which would not always be convenient: it may be felled, and its but submerged in the liquid it is destined to absorb, when this will find its way to every part.

"On the other hand, the tree may be treated standing, if this be preferred; for it is only necessary that cavities be cut near the bottom, or the trunk be partially severed by a saw, and that the parts thus prepared be put in contact with the liquid, to ensure the desired result.

"This species of penetration, or absorption, which is effected in a few days, without either difficulty or labor, is, as will be readily seen, wholly different from any means hitherto employed. Previous methods are well known to consist of forcing the ingredients into the pores of the wood, by powerful pressure, or of introducing them by the prolonged and imperfect action of liquids prepared at much cost, in huge vats, in which the timber is kept submerged.

"The new and ingenious process of Mons. Boucherie has placed at the command of industry an immense *natural* force, which enables it, without cost, to conduct into the most delicate vegetable tissues all soluble substances which it may be desirable to deposite there.

"If the author has resolved, in a simple and ready manner, the great problem which he at first proposed, he has not manifested less sagacity in his choice of the substances which he has adopted for fulfilling all the indications announced above.

"To augment the duration and hardness of wood, and to oppose its decay, either dry or humid, the crude pyrolignite of iron is to be introduced into its tissue. This substance is wisely chosen, because crude pyroligneous acid is produced in all the forests, in the process of manufacturing charcoal; and it is easy to convert this into the pyrolignite of iron, by simply putting it, even when cold, in contact with scraps of old iron: and because, also, that the liquid, thus prepared, contains much creosote, which, independently of the salt of iron, itself possesses the property of hardening, and of guarding against the attacks of decomposition, as well as the destruction caused by insects, wood and timber employed in constructions and for other purposes.

"Authentic experiments tried in the cellars of Bordeaux, upon hoops, prepared by the author, have proved in the most conclusive manner, the prolonged duration of wood, after subjection to his process. The ordinary hoops fell to powder, upon the least application of force to them, while those of the same age, which had been subjected to his preparation, were as solid as upon the first day they were placed there.

"If he wishes to preserve the elasticity of wood, and to render it less combustible, the author has found in the employment of chlorine with an earthy base, the means of accomplishing these ends. Ever preoccupied with the thought that his discoveries, to be most serviceable, must receive universal practical application, the author has not contented himself with the employment of the chlorate of calcium, notwithstanding its great cheapness, but he has analyzed the sea water from the pits of the salt works, which is without value, and by so doing has obtained therefrom all the qualities necessary to his purpose. The different woods prepared by his saline solutions preserve their flexibility, even after several years' exposure to the air; and thin sheets of this wood were twisted into spirals, first in one direction and then in the contrary one, without their suffering the slightest fracture or injury of any kind. Exposed to the air these thin pieces were neither split or otherwise injured, however dry they became: and, finally, they were so far incombustible as to be incapable of sustaining or propagating conflagration.

"To these highly useful properties, which the constructors of ships, bridges, dwellings, &c., will readily appreciate, and turn to profit, the author has joined others, less important certainly, put still new, and not without interest, in the arts. He *colors* woods in clouds so varied and casual as to promise much utility, by the employment of his method in ornamenting the most ordinary woods, so as to fit them for the fabrication of furniture, and for other purposes of ornamental use.

"The specimens of this kind, now before the Academy, relieve us from all details upon this head: and it therefore suffices for us to say:

"That the pyrolignite of iron, alone, gives a very beautiful brown tint;

"That by causing tannin to be absorbed by the tree, after the pyrolignite of iron, the mass of the tree is rendered black, while some portions exhibit tints of blue, black and gray;

"That by introducing, first, the pyrolignite of iron, and afterwards the prussiate of potassa, a fine Prussian blue is produced;

"That by introducing, successively, the acetate of lead and the chromate of potassa, a lemon, or chromate of lead color is produced;

"That by introducing into the same trunk, the pyrolignite of iron, prussiate, and acetate of lead, and chromate of potassa, the whole wood assumes a series of clouds of blue, green, yellow and brown, which collectively produce the most varied and pleasing effect.

"The colors and shades may be varied almost to infinity, according to taste or fancy: as chemistry is sufficiently rich, in agents of this nature, to satisfy the wants, and even the caprices, of the most fastidious.

"We have said nothing here, of the communication of odors to woods, by impregnations of this kind, because this is an application easily comprehended without explanation; and also because it is too strictly limited to the demands of luxury to be placed in the same scale of importance with the valuable results which we have above enumerated.

"It is evident, from the bare announcement of all these results, that they have not been, and never could be, the result of accidental discovery. The author has deduced them from simple ideas; and they are the fruit of long continued and laborious studies and experiments.

The commission closed their labors with a recommendation that a copy of their report be transmitted to the ministers of agriculture and commerce, of the public works and the marine, of finances and of war, which recommendation was adopted by the Academy.

At a subsequent sitting of the Academy, that body received notice from the ministers of war and of finance, that they had recommended the method of Dr. Boucherie to the special attention of the commissioners of engineers, the artillery, and the woods and forests. This shows the importance that is attached to the discovery, by public functionaries, and by the first scientific men of this, or any age, residing upon the spot where its results have been witnessed and investigated.

R. W. HASKINS.

Buffalo, March 22, 1841.

ANSWERS TO THE GENERAL QUERIES ON THE EFFECTS OF MARL (INSERTED AT PAGE 24 VOL IX, AND ELSEWHERE,) IN REGARD TO SOME FARMS IN JAMES CITY AND SURRY COUNTIES.

[We feel the more indebted to the gentlemen who have contributed to furnish this article, because of the fewness of their number; and therefore, especially, we owe thanks to the only farmer who has answered from James City, the county where marling, as a regular business, was commenced earlier than in any other part of Virginia, and in which the improvements thereby made have been among the most extensive and valuable, and notable, for great benefit to public interests, as well as to private and individual interests. We have several times presented general statements of our own, founded upon our own general and superficial observation, of the valuable and remarkable results of marling in James City county, and the adjoining part of York, which lies next to Williamsburg;* and, besides the general invitation—and request, addressed to all, we have made particular and urgent efforts to obtain a full report from this, the most interesting marling region of Virginia. But having failed entirely in obtaining any response or aid, except in the single case which will be here presented, we can add nothing more to the general description and statements of our own which were offered on former occasions.

The county of Surry stretches along side of James City, for some 20 miles, separated only by the width of James river. But, considering the close neighborhood of Surry, and its numerous and easily accessible marl beds, and the peculiar fitness of the lands to derive benefit from marling, it was remarkable that the practice was commenced late and carried on slowly, compared to James City, Prince George, and to other counties of Virginia, though the progress has been slow every where. Yet there is no part of the country where the effects of marl have been more beneficial, or where they are more wanting, or more cheeply obtained, than in Surry. But few and slow as have been the operations, compared to the facilities and inducements to marl, there are yet in that county much older and much more extensive labors than those of the farmers to whom we are obliged for the following answers.

The land of Surry is generally level, very sandy, and light, and naturally poor. Such, we infer, was the character of all the three farms in regard to which answers will be given. The same general description would suit for most of the marl lands of James City county, (omitting the river farms,) excepting that they are more undulating, and not quite so sandy and light as the Surry lands.—ED. F. R.

Answers of H. B. M. Richardson, in regard to his farm in James City county, Virginia.

1. 2.—From the best information I can obtain, the use of marl was commenced about the year 1776. Quantity then marled about one acre and a half or perhaps two acres. About 1798 another acre or perhaps less was marled. In 1829, I began to marl, since which time (1829) the farm has been under my personal management and direction.
3. —The quantity of cleared land in 1829, was about 85 acres of arable land.
4. —15 or 20 acres have been since added by clearings, which, at the time the cultivation of said land was discontinued, must have been poorer than the adjoining which was reserved for tillage.
5. —The rate of extending the marling, was from 6 acres, to 15 acres per annum. About 100 acres are now marled.
6. —None of the marl has been analyzed, but I think the greater part of what I have used was of the best quality.
7. —Part of the marl used, was what is called sandy marl, and contained a considerable quantity of "green-sand," but whether the quantity

* See at p. 108, vol. 1, and p. 415, vol. 8, Farmers' Register, the more extended remarks on this subject and locality.—ED. F. R.

was sufficient to add to the value of the marl I know not. The other marl was clayey, having very little "green-sand." I presume no gypsum was in either.

8. The stony hardness of many shells that could not be got rid of in the sandy marl, without much trouble, must have caused the marl to be of less value, because, to get the required quantity, the mass of marl used was greater than would otherwise have been necessary. Not so with the clayey marl; for although there were many masses of what we call marl-rock, many of them weighing hundreds, perhaps thousands of pounds, yet, because they could be easily separated, the marl used was not of less value.

9. The quantity of sandy marl applied, was from 150 to 300 bushels per acre. Of clayey marl, from 150 to 350 or more per acre.

10,11. The above, are the only trials I have made, in varying the amount of marl applied.

12. The cropping and general management of the land for many years before marling, as well as during 5 or 6 years after I commenced marling, was as bad as could be. Corn, wheat, and a small quantity of oats, were the crops, grazing wherever there was any thing to graze on.

13. About 7 years ago, I effected a revolution in the management of my farm, and in the manner of cropping; and up to this time have tried more plans and systems of farming, perhaps, than any good farmer would have done. The increase, however, in the amount of crops and in the fertility of the soil, has been steadily and I think rapidly advancing. I have now for the second time adopted the three-shift rotation as preferable, corn, wheat or oats, and clover—no grazing as usual for the last 7 years.

14. All the newly cleared land added to the farm had been marled invariably before cultivation: consequently no comparison of crops could be had on marled and unmarled new grounds. With one exception, all my old land when marled was in nearly the same condition, that is, nearly bare of vegetation from excessive grazing. The increase in the crops on said land next after marling I suppose to be from 50 to 100 per cent. Generally, the annual increase afterwards was not so great. The exception above referred to is a piece of land marled and cultivated in corn last year, (1840,) which had been at rest and ungrazed for 3 years, and had a good covering of broom straw and other grass. Marl used of best quality. Broom straw, &c. all burnt off clean—on this piece of land, I think the increase in the crop must have been 100 per cent.

15. The crops on the marled land continue to increase annually.

16. I am decidedly of opinion, from observation and experience, that any course of cultivation or rotation of crops, destructive or injurious to the fertility of marled land, would be much more so to unmarled land.

17. About 4 acres of light sandy land marled in 1830, at about 300 bushels of strong yellow marl per acre, was injured, but is now recovering from said injury by the application of manure and no grazing.

18. So durable do I think vegetable and putrescent manures after marling, that, under the three-shift rotation of corn, wheat or oats, clover and no grazing, it is only necessary to give to the land an ordinary quantity of good manure, to make it produce clover, and continue to improve without any additional quantity of manure. Thus experience teaches me.

19. The average quantity of corn on all my arable land before marling could not have exceeded 10 bushels per acre, perhaps less.

20. Now not less than 25 bushels per acre.

21. The average quantity of wheat raised on the farm before marling was not over 60 bushels annually. Now not under 100.

22. In 1827 I began farming operations where I now live. In 1829 I began to marl. In 1833, 80 bushels of wheat, and 75 or 80 barrels of corn were made. In 1834, 94 bushels of wheat and 80 barrels of corn. So is it noted in my journal. Most of the land on which the above crops were raised, had been marled a short time previous, and contained the best of all the arable land. The crops of corn above referred to were badly managed, though worked with a hoe three times. In 1840 one-third of the arable land, 30 acres of which is the second best field, with no hoe work, though well managed in other respects, produced 140 barrels of corn. Another third, and which is the best field, although in corn the two preceding years, produced, I suppose, not much less than 400 bushels oats. The other third, and much the poorest field, produced, as well as my memory serves me, between 110 and 120 bushels of wheat, most of which weighed 60 lbs. to the bushel.

23. Not at all—neither the land marled by myself, nor that marled by others *long anterior*, [in 1776 and 1798,] contradicts the statements of the "recapitulation" embraced in pages 53 to 56 of 'Essay on Calcareous Manures.'

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II. *Answers of Bolling Jones, in regard to the use of marl on his farm, (Walnut Valley,) in Surry Co., Virginia.*

Answers to 1st query.—The farm became my property in 1834, and I commenced marling that year; but a part of the farm, I do not know how many acres, had been marled by my father, the precedent owner.

2d.—Since 1834 it has been my property, and generally under my management.

5th.—In the earlier part of my marling operations my progress was very slow, as the work was done solely with the farm hands, at leisure times—if there are any such times on a farm. There have been marled, up to this time 241 acres, and this year I have allotted a separate force for the especial business; and hope, by this means, to finish marling all of the arable land in 1842.

6th.—The quantity of carbonate of lime in the marl used is estimated at 55 and 60 per centum.

7th.—There is green-sand in the marl, but in what proportion, I do not know, though I think it is about 12 or 15 per cent. The marl which abounds in it most has ever been prefered, and most sought for.

8th.—In many of the beds of marl on the farm there are hard masses of cemented shells and rocky matter, but they were invariably avoided and never have been used.

9*th.*—250 and 300 bushels, are the quantities usually applied to the acre.

10*th.*—There never has been less than 200 bushels put on the acre, and I am satisfied that it was not enough, as the land marled with that quantity was not very poor: but I have seen land that at even 100 bushels to the acre I should consider heavily dressed.

11*th.*—In 1835 the land marled was dressed at the rate of 500 bushels per acre, and the preceding year cultivated in corn, which was very fine, yielding nearly double as much as it did the previous year—no kind of either vegetable or putrescent manure being used at all. It was put in corn again in 1839, and the crop was evidently injured by over marling, particularly in the weaker parts of the field, though the grain equalled the crop of '36, but the fodder, however, was very much injured.

12*th.*—The general management of the farm, for some years previous to its being marled, was not such as could be considered meliorating, or even as preserving its fertility.

13*th.*—The three-shift rotation has been followed since marling, with clover on all the land that would grow it profitably. No grazing allowed, save from Christmas until March—that is, from the time the corn crop is gathered until the time to plant again: but even this partial grazing will be abandoned after this winter.

14*th.*—The usual and general results of the applications of marl, have been highly satisfactory, the least being 25 per cent., and on some fields 100, the first year of its application. Since its first application, the progression of improvement has been steady, on some fields more and on others less dependent, it seems, on the quantity applied. When a very heavy dressing was applied to a field, the effect was immediate and very great, and the subsequent less and very gradual, and *vice versa*.

15*th.*—The earliest fertilizing effects of marl have continued to increase from the time of its first application until the present time, and in no instance whatever, have I ever known it to diminish, that is, I have never known any *present* crop to be less, than the *preceding* one.

16*th.*—I am decisively of the opinion, that the early increased product of the marled land, will not be subsequently diminished, under any rotation of crops or course of cultivation, that would not have been decidedly exhausting and injurious to the lands if it had not been marled.

17*th.*—Inconsiderable portions of the marled lands have suffered from over marling, such for instance, as the galls and the weaker parts of the field, while the field, generally, was greatly improved and not at all injured; but even these places have never been reduced to sterility. The system of cultivation (as said in the answer to the 13th query) was the three-shift rotation, and the soil a light one.

18*th.*—From my experience, I should say that either vegetable or animal manures are worth double as much applied to marled lands, as to unmarled lands; for on all trials with manures on unmarled lands, they have always proven to be exceedingly evanescent, so much so, indeed, (especially on light soils,) that I have often doubted whether they were worth the trouble and expense of making, and then the additional trouble of carting and spreading on the land.

19*th.*—This query I can scarcely answer satisfactorily, to myself, but I do not think the farm would have exceeded 9 or 10 bushels of corn to the acre—probably a bushel or so under that estimation.

20*th.*—The crop of corn this year, (and the last also,) on the marled land, averaged between 19 and 20 bushels of sound corn per acre, by actual measurement.

23*d.*—Neither my experience nor observation contradicts any of the statements of actual results in practice, as presented in the "recapitulation" embraced in the 'Essay on Calcareous Manures.'

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III. Answers by Peter T. Spratley of the county of Surry.

Answer to query 1*st.*—Commenced in August, 1834, when I only marled about one acre, the poorest spot in the field.

2*d.*—The farm was then, and had been for many years before, and ever since, my own property, and under my direction.

3*d.*—The quantity of cleared land, subjected to cultivation in its turn, was three hundred acres, or thereabouts.

4*th.*—None of consequence added since.

5*th.*—About 200 acres have been now marled.

6*th.*—The strength of the marl from 45 to 50 per cent. as a general average—some of it much richer.

7*th.*—Besides the calcareous earth in the marl there is green-sand, and a portion of blue soapy-looking clay, of a strong and somewhat unpleasant odor.

8*th.*—There were occasionally some hard lumps, so strongly cemented that a whole winter's frost would not decompose them.

9*th.*—From 250 to 500 bushels of marl put to the acre.

10*th* and 11*th.*—No quantity applied lighter or heavier than within the limits just stated.

12*th.*—The previous cultivation had been on the three-shift rotation—1st, corn; 2d, oats upon all worth seeding; 3d, rest. The land was gradually improving under this system.

13*th.*—The same rotation was continued, with clover, and but little grazing allowed, and with manifest improvement.

14*th.*—When the marl was spread any length of time previous to the ploughing and tillage, the increase of the corn crop has been fully 50 per cent., and that of the oats [following] upwards of one hundred.

15*th.*—My experience does not enable me to answer this question, not having made a second crop of corn on the marled land, except as to the acre marled in 1834; the second crop of corn on this spot after marling, was increased fully 300 per cent., with no other aid to the marl than a slight covering of leaves and litter from the woods. The crop of oats succeeding the corn was a good one; and, previous to marling, oats would not have grown on it more than three or four inches high, perfecting no grain.

17*th.*—No damage has been suffered.

18*th.*—None other than vegetable or putrescent manures have been used; no doubt exists with me that they are far more durable on marled land.

19*th.*—The former average product in corn supposed to have been from six to eight bushels.

20*th.*—I suppose on the marled land about 20 bushels, without additional improvement by other manure.

21*st.*—I have never made wheat as a crop—corn, oats, peas and cotton have been my usual crops—and for the last several years I have made no cotton. The picking out I found to interfere with my marling operations.

22*d.*—The same answer as given to the 15th query will apply to this, but I have no hesitation in saying that the annual gross product will not fall short of 50 per cent. over and above its product previous to marling.

23*d.*—So far as my experience goes, it tends to confirm the theoretical opinions of the 'Essay on Calcareous Manures.'

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IV. Answers of W. C. Jones, of Surry county.

Answer to 1*st query.*—The use of marl as a manure was commenced on my farm by myself in 1836, but an experiment had been made by my father on about three acres, many years ago, perhaps twenty years or more. It is obvious that this piece of land was dressed very heavily with marl, probably with 1200 or 1500 bushels to the acre, as only a part of it, so late as 1834, would produce any thing at all, the remainder being rendered sterile by the immense dose. Now, however, these three acres, without ever having received the least aid from either animal, vegetable or mineral manure (but after having been ploughed *very* deep) will produce at least a third more than the surrounding land, which was marled in 1839 at the rate of 250 bushels per acre.

2*d*—Since 1834 the farm has been solely under my management.

5*th.*—The rate of progress in extending the marling has been irregular, as no separate force was allotted for the business, it being only done at leisure times, after finishing the crop. Up to this time there have been 210 acres marled.

6*th.*—The marl used would average perhaps 65 per centum of carbonate of lime.

7*th.*—None of the marl used previous to 1840 contained any green-sand; but since that time the blue marl has been used exclusively, which has enough green-sand in it to give it the appearance of being tinged with blue after being carted in the field previous to spreading it. I am unable to say, however, what per cent. of green-sand is in it, or what effect it will have, as no land has been cultivated as yet on which that marl was put.

8*th.*—There was nothing in the marl to lessen its value as a manure, neither stony hardness of shells or masses of marl.

9*th.*—From 150 to 250 bushels per acre—according to the quality of the marl used, and the strength of the land marled.

10*th* and 11*th.*—No heavier or lighter dressings, except what was mentioned in the first answer.

12*th.*—The cropping and general management of the land for a few years, or, in fact, many years previous to its being marled, was not such as could be considered meliorating or improving, but, on the contrary, extremely impoverishing and wasting of its fertility.

13*th.*—The three-shift system has been practised since marling, and no grazing allowed, except the gleaning of the field by my hogs after harvest.

14*th.*—The usual and general results of the applications of marl have been encouraging and highly satisfactory—an increase of the crop next following from 50 to 60 per cent. on the light soils, and on the whortleberry and "pocoson" lands perhaps more than 100; and to the present time the increase has been gradual, but far more rapid on the "pocoson" land, which was marled and manured at the same time, and now will produce four or five times as much as it did before it was marled.

15*th.*—The earliest effects of marl have been subsequently increasing, and have not been diminished by the lapse of time.

16*th.*—I do not think that the early increased product of my marled land will be hereafter lessened under any rotation of crops or course of cultivation, that would not be decidedly exhausting and injurious to the land, if marl had not been applied.

17*th.*—I am decidedly of the opinion that either the vegetable cover of the land or other putrescent manures are a great deal more efficacious and durable on marled land than unmarled land.

23*d.*—No practical contradiction known to your views of the action of calcareous manures.

THE HONEST AND BENEFICIAL CREDIT SYSTEM CONTRASTED WITH THAT WHICH CHEATS AND ROBS THE COUNTRY.

[The following is one of a series of dialogues, in plain and common-sense phrase, on the effects of our paper-money system, and the present deplorable condition of the country thereby produced, which have been published in the Philadelphia Public Ledger—which excellent and independent little "penny paper" is one of the best informed, as well as boldest and most honest of the few publications in this country which dare to utter any thing to expose the frauds and iniquities of banks, and the baneful operation of the banking system of this country. We recommend this paper to all southern readers who are destitute of any such source of correct information nearer home. If such a paper, so well informed, honest and fearless as the Ledger, were published in every state of the union, there would be some chance for truth to be diffused in regard to banking, and some hope for relief from the most powerful system of fraud and pillage that ever was borne by a free people.—Ed. F. R.]

Smith.—Did you see an account in the papers, the other day, of a newly invented instrument of destruction, called the "Death Dealer?"

Jones.—Yes, and I was amazed at the frightful power it is represented to possess. The account I saw stated that a ball weighing not more than eighteen pounds was sufficient to blow the strongest fort into atoms.

S.—When I read the statement, I was struck with the similarity between this tremendous physical agent and the equally tremendous moral agent with which we are all familiar, the present banking system. The one annihilates men's lives with the greatest certainty; the other annihilates men's property with equal certainty. It is true that one is quick and the other is slow. It is also true that the destruction wrought by the one is accompanied by noise and by ocular evidence, whilst the other works quietly and unseen. But they are equally destructive. They are both "death dealers," in the true sense of the term; for it matters little whether a man loses his life, or the means of sustaining life, as tens of thousands of persons in the United States have done within the last five years.

J.—Very true. Your figure is rather strong, to be sure; but is there no mode of ridding the country of an engine of such a destructive character?

S.—It can never be accomplished but by one process.

J.—And what is that?

S.—By the community's coming to its senses, and abandoning the idea that the public prosperity requires monopolies and special privileges to be conferred upon any one portion. There lies the whole seed of the evil.

J.—Explain your meaning more fully.

S.—I will endeavor to do so. You are aware that in every trading community what is called credit is a necessary auxiliary to the creation of wealth. Credit, as every body knows, is the power of obtaining temporary possession of another man's property under a stipulation that property of greater value shall be returned for it at some future day. This temporary possession of another man's property, whether it be by buying things on credit, or hiring houses or farms, or by borrowing money, is what enables people who have no property of their own, or not enough to answer all their purposes, to turn their labor to account. It is by means of credit, that the merchant who possesses a capital of ten thousand dollars can import or export goods to the amount of twenty or thirty thousand dollars. It is by means of credit that the manufacturer can supply himself with raw materials upon which he can exercise his labor and skill, and thus derive a profit from what might otherwise be wholly unproductive. It is by means of credit, that a vast number of houses and ships are built, many mechanical trades carried on; and it is by means of credit that industrious and frugal men often become the owners of plantations.

J.—You are then, I perceive, a believer in the benefits of "the credit system."

S.—Undoubtedly, I am, and so is every person who has taken the trouble to examine the subject. But mark me. By the credit system, I mean the legitimate operations of business prudently conducted, and arising in the natural course of trade, and not the wild, indiscriminate abuse of credit which springs up under an ill-conducted banking system, and which by some is confounded with the other.

J.—But are there not risks connected with the best possible credit system that can exist, which sometimes occasion loses to creditors?

S.—Most certainly there are, but as no human prudence or foresight can guard against calamities of every sort, so is it impossible that credit can exist without losses. Still, as the advantages of credit, properly conducted, to the community far outweigh all the disadvantages, it has been introduced into every country where there has been the smallest accumulation of capital.

J.—Do you consider that a well conducted system of credit can be benefited by legislation?

S.—All that legislation ought to do, or can do advantageously, is to afford creditors the facility of compelling their debtors to comply with their contracts, and to punish them if they are guilty of fraud. Legislation destroys the whole basis of credit, when it confers upon any set of men the special privilege of *exemption from personal liability to the whole extent of their property* for any of their engagements. There is the whole pith of the matter. If limited liability were to be tolerated by the laws in the transactions of individuals, or of *all the parties* to a limited copartnership, we should have a race of swindlers springing up in all parts of the land, who would act upon the true gambling principle, of risking a part of what they possessed for the sake of the chance of making great profits upon the exercise of their credit.

J.— Then you consider that the proper remedy for a vicious banking system, is individual liability.

S.—I can conceive of no other. With full and complete individual liability, the trade in money and paper credits might be left just as free as the trade in shoes, hats, coats, wigs, mutton, beef and bread. We want no laws to regulate carpenters, bricklayers, painters, masons, and the various other mechanics who carry on their business by the laws of competition. If people should pretend to manufacture money for sale, those to whom it was offered would exercise their discretion in judging of its quality as they now do in judging of nutmegs, whether they are made of wood or are the genuine fruit of a tree. None but men of known wealth would be able to keep notes in circulation, and such men would be cautious not to issue too many, inasmuch as the whole extent of their property would be liable for their payment.

J.—But have we not had some examples of individuals of doubtful character and credit too, putting notes in circulation to a large amount?

S.—Only in times of bank suspensions, when notes were payable, not in money, but in other notes. The Spanish proverb says, "all cats are black in the dark." So it is with banks or bankers, when they do not pay their notes in coin. If there were no notes in existence but those issued by parties individually responsible, there could never be any *general suspension* of specie payments. Individual bankers, like individual merchants, might fail, but the community would at no time be liable to great expansions or contractions of the currency, and the evils to which it would then be subject, would only be such as are inseparable from the existence of credit, and which no human sagacity or skill can prevent.

THE AMERICAN COTTON TRADE.

From the Savannah Republican.

From a report made to congress by the secretary of the treasury in 1836, it appears that in the year 1791 the state of Georgia produced about 1,500,000 lbs. of cotton. In 1801 the states of North Carolina, Virginia, and Tennessee had embarked in the same cultivation, the former having produced 4,000,000 lbs., Virginia 5,000,000, and Tennessee 1,000,000. Ten years afterwards tracts of land were colonized upon the banks of the Mississippi. In the year 1821, 20,000,000 lbs. were produced in the state of Alabama, and 10,000,000 lbs. in Mississippi. Florida and Arkansas soon followed in the production of the staple. The following is a table showing the comparative growth in the several cotton-growing states, at intervals of ten years, from 1791 to 1834.

Relative proportions of cotton grown in the different states.

Years.	Virginia.	N. Carolina.	S. Carolina.	Georgia.	Florida.	Alabama.	Tennessee.	Mississippi.	Louisiana.
1791	—	—	1½	0½	—	—	—	—	—
1801	5	4	20	20	—	—	1	—	—
1811	8	7	40	40	—	—	3	—	2
1821	12	10	50	50	—	20	20	10	10
1826	25	18	70	70	2	45	45	30	38
1833	13	10	73	73	15	50	65	70	55
1834	10	9½	65	65½	20	45	85	85	62

We annex another table which shows, in general terms, the amount of cotton grown in the world during the same period, exhibiting at the same time the relative proportion produced by the United States.

Millions of pounds grown in various parts of the world.

Years.	The World.	United States.	Brazil.	West Indies.	Egypt.	Rest of Africa.	India.	Rest of Asia.	Mexico and S. America.
1791	490	2	22	12	—	46	130	190	68
1801	520	48	36	10	—	45	160	160	56
1811	535	80	55	12	85	44	170	146	57
1821	630	180	32	10	6	40	175	135	44
1831	820	385	38	9	18	36	180	115	35
1834	900	460	30	8	25½	34	185	110	35

The Sea Island now forms but a small portion of the cotton production. In 1834 the export of this species of cotton was $8,085,000, and during the following year it was $7,752,936—the whole of it being produced in South Carolina and Georgia. The production will doubtless be somewhat extended hereafter in Florida, but Nature has assigned very strict limits to the growth of the Sea Island plant. The export of it during a period of twenty years has been on an average about 8,000,000 pounds per annum, the principal part of which has been carried to England.

QUALITY OF MILK.

Several cups have been successively filled while milking from one cow, producing the following results: in every case, the quantity of cream was found to increase in proportion as the process of milking advanced: in different cows, the proportion varied, but in the greater number the excess of cream in the last cup as compared with the first, was as 16 to 1: but, as in some cases the difference was not so much, a fair average might be considered as ten or twelve to one. And the difference in the quality of the two sorts of cream was no less striking, the cream given by the first drawn milk being thin, white, and without consistence, while that furnished by the last was thick, buttery, and of a rich color. The milk remaining in the different cups presented similar differences, that which was drawn first being very poor, blue, and having the appearance of milk and water, while that in the last cup was of a yellowish hue, rich, and to the eye and taste resembled cream rather than milk. It appears, therefore, from these experiments, that if, after drawing seven or eight pints from a cow, half a pint remains in the udder, not only almost as much cream will be lost, as the seven or eight pints will furnish, but of such a quality as gives the richest taste and color to the butter. This fact has been corroborated by chemical experiments, and holds good with respect to the milk of all other animals.—*Blacher's Essay.*

ANTI-FRICTION.

He who makes hard things go easy, deserves praise.

From the Farmers' Cabinet.

If horses could speak, no doubt they would often complain of the excessive friction of cart and wagon wheels.

It should be the duty, as it is unquestionably the interest of every farmer in the country, to see to the state of his wheels at frequent intervals, and lessen the friction of them to the lowest possible degree. The horse is an interesting and useful animal, and has but a dogged life of it under the most favorable circumstances, and therefore he ought to have his interest and comfort duly considered and attended to. Those who oppress beasts unnecessarily, always add to their own burdens by increasing their expenses; for all domestic animals pay well for kindness and care. A horse will be more useful, and last much longer under kind and Christian treatment, than when he is subjected to unnecessary hardship and extreme drudgery. A horse always draws with the greatest effect when the line of draught is inclined upwards, so as to make an angle of about 15 degrees with the horizon; for at this inclination the line of traction is set at right angles to the shoulder, all parts of which are then equally pressed. When part of the weight presses on the back of the horse, he will draw a load which else he would be incompetent to move; hence, a horse can accomplish more in a cart properly loaded, than he could otherwise. The question, in regard to the material most proper to be applied to wheel-carriages to diminish friction, is one of great importance, and every well wisher to the

interests of farmers ought to lend some aid in solving it. All the varieties of grease, tar, and their combinations have been resorted to; and there are other substances which have of latter years been adopted to lessen the friction of machinery; such as black-lead and soap-stone pulverized, and mixed with small quantities of fat of some kind. Yet I have seen no results of comparative experiments published to instruct and guide the public. Should any of the readers of the Cabinet possess practical knowledge on this useful and interesting subject, they would much oblige some of your readers by making it public through your columns. We have many *anti's* in our widely extended country, but we want one more, in the form of an *anti-friction composition*, for application to cart and wagon-wheels, to make them revolve with less labor to our horses; and he who will discover and make it known through the Cabinet, will deserve well of the community at large.

Z.

CAPACITY OF THE CLAYS AND ROCK-MARL OF VIRGINIA, TO FORM HYDRAULIC CEMENT, AND THE APPLICABILITY OF ROCK-MARL TO BURNING LIME.

To the Editor of the Farmers' Register.

Presuming that a new and useful application of substances so generally and widely diffused as the clays and marls of Virginia, will be both interesting to yourself and acceptable to your readers, I send you the results of some experiments made upon them in reference to their capacity for forming artificial hydraulic cements. Learning through the work of Vicat* of the successful application by the French engineers of the clays and chalk of France to the manufacture of hydraulic cement, I was induced to ascertain how far their generalizations were applicable to the clays and rock-marl of Virginia, which I was aware resembled in composition the chalk and clay of France. The clay used in these experiments was of the variety familiarly known as pipe clay or fuller's earth, which, from its absorbent power, is so frequently used in domestic economy for removing grease. The clays best adapted to making hydraulic cement are free from grit or coarse sand, are fine grained and homogeneous, have an unctuous feeling, and are rich in alumina.† The appearance of a clay is a very imperfect criterion of the amount of silica or sand it contains, as clays are frequently rich in silica, whose external appearance would not indicate its presence. The existence of silica, however, in that minutely divided state in which it is perceptible neither to the sight nor touch, is by no means an unfavorable ingredient, as it is in that condition most favorable to its combining with the lime, and forming with it a silicate, which is probably essential to the hardening of the cement. Clays possessing the requisite qualities chiefly abound in the marl region of Virginia, but are by no means rare further west; and, wherever found, will, if mixed in the proper proportion with lime, form a hydraulic cement. The clay of Vaugirard, used in the manufacture of artificial hydraulic cement, at Meudon, near Paris, consists of

Silica	63
Alumina	28
Oxide of iron	7
Loss	2
	100

The resemblance in composition of the clays of Virginia to that so successfully used at Meudon, will be seen from the following analyses.

(A.)—Clay from Smithfield.

Silica - - - -	68.4
Alumina tinged with prot-oxide of iron	24.7
Water* and loss - - -	6.9
	100.0

(B.)—Clay from Scott's factory, 4 miles from Smithfield.

Silica - - - -	74.4
Alumina tinged with prot-oxide of iron	17.8
Water* and loss - - -	7.8
	100.0

Clay (B) was used in the experiments quoted below. This clay was of a dingy drab color, compact, fine-grained, homogeneous and saponaceous.

The *rock-marl* was from the estate of Mr. M. T. Dickson, in the vicinity of Smithfield; it consisted of small fragments of shells, cemented together. This marl was found upon analysis to contain 95.9 per cent. of carbonate of lime, the remainder consisting of ochreous sand. The marl and clay previously pulverized were mixed in the proportions stated below; the mixture was then heated sufficiently to render the lime caustic, or to convert it into quick-lime. After burning, the mixture was formed into a mortar by adding water and sand, as in the ordinary process. Mortars formed in this manner, of different proportions of the ingredient, were spread on the bottoms of China jars to the depth of an inch, and the jars filled with water. The different proportions of the ingredients used in the mortars, and their respective behavior when exposed to the action of water, is stated below.

(A.)†—Marl 9 parts, clay 1, combined with one-fourth its bulk of sand, ***rapidly hardened under water***, forming a compact mass, perfectly resisting the action of the water, and may be considered a hydraulic cement of the best quality.

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* Vicat on Cements, translated by Capt. Smith, London, 1837.

† Alumina is mentioned as one of the requisite ingredients of the clay, more from deference for the opinions of others, than from any convictions of my own. I do not regard the presence of alumina necessary, and am inclined to refer the hardening of the cement to the formation of a silicate.

* It was considered unnecessary to determine the exact amount of water in the clays analyzed, as it had no connexion with the result. The whole amount quoted as "water and loss" in the analysis consists chiefly of water, as the loss is but the fractional part of a grain.

† These experiments were made in the winter of 1839 and '40; and hence the results have been fully tested.

(*B.*)—Marl 9 parts, clay 1, combined with half its bulk of sand, refused to harden under water, but when exposed to the atmosphere became compact and hard, but was *slightly* acted upon by water after several months' exposure to its action.

(*C.*)—Marl 7 parts, clay 1, combined with half its bulk of sand, refused to harden under water, but after exposure to the atmosphere became so hard and compact as to perfectly resist the action of water, though covered by it for months.

Mortars *B* and *C* would not answer as hydraulic cements in masonry exposed immediately after its completion to the action of water, but would form an admirable stucco, and would subserve all the purposes of a hydraulic cement, where the masonry was permitted to harden in the air before being exposed to the action of water, as in dry docks, the locks and viaducts of canals, &c. These experiments satisfactorily show the capacity of the clays of Virginia to form hydraulic cement, when mixed with lime in certain proportions. It is by no means intended to convey the impression that the relative proportions of the materials selected in the above experiments are those best calculated to form a good cement. Doubtless further examination would have given better proportions, but it was considered unnecessary to multiply experiments upon the subject; for however accurately the proportions might have been determined for the materials used, they would only have been applicable to clays identical in composition with the one used. As the clays are very variable in composition, experiment in each instance can alone determine the proper proportions and afford a guide to the mixture of the materials. Experiments similar to those above described will enable any individual to select the proportions best calculated to secure success. Vicat, whose extensive experience as an engineer entitles his opinion to great credit, recommends the following proportions: 20 parts of dry clay, to 80 parts of unslaked lime, or 110 parts of slaked lime; if the lime be unburned 140 parts should be used with 20 parts of clay. Messrs. Brian and Saint Leger at their manufactory at Meudon, pursue the following process: the clay and chalk (uncalcined) in the proportion of one measure of the former to four of the latter, are formed into a pulp with water, to effect their more perfect intermixture; further to promote which the pulp is thoroughly stirred. The watery portion of the pulp is then separated from the solid, and the latter is moulded into small prisms, which after drying are ready for the market, the necessary burning being done by the purchaser previous to using the cement. In this manner is formed an artificial cement, possessing all the properties of the natural hydraulic cement, as has been satisfactorily proved in the construction of the masonry of the harbor of Toulon, the canals of St. Martin and St. Maur, and other public works, in which the artificial cement has been exclusively used.* This process cannot be strictly applied to the clay and rock-marl, as the latter cannot be sufficiently pulverized to form the necessary admixture with the clay, without being first burned. After having determined by experiment the relative proportions of the ingredients, the clay should be thoroughly mixed by any convenient method with the lime, derived from the calcination of the rock marl, or other source, and the mixture subjected to a heat as intense as that usually employed in burning lime, when the cement will be ready for use. The lime of the rock-marl was not used in these experiments from any supposed superiority over that derived from any other source, but merely to show how successfully it can be substituted for the lime of commerce. A band of this variety of marl extends along the eastern margin of the marl region, from the northern to the southern boundary of the state. Several specimens of this marl, selected from localities widely separated, averaged 81 per cent. of carbonate of lime, while it not unfrequently, as in the vicinity of Smithfield, contains over 90 per cent. of this ingredient. The average richness of the rock-marl in lime is equal to that of the limestone used in this state and Pennsylvania for burning lime; yet to this purpose it has rarely been applied, though admirably adapted for it, by its richness, its open porous texture, which causes it to yield more readily to heat than a compact limestone, and its extensive distribution in a manner presenting great facilities for quarrying. In urging this neglected, though useful substance, upon the attention of the public, regard has only been paid to its applicability to mortars and cements, it is unnecessary to say that it has equally strong claims upon the attention of those agriculturists who acknowledge the beneficial efficacy of lime in their profession. Were it not for the daily proofs to the contrary, it would be incredible that any should still be skeptical as to the efficacy of a substance whose value as an agricultural agent was admitted in the days of Pliny, whose use has been sanctioned by the enlightened agriculturists of Europe for years, and to which large portions of our own country are indebted for their regeneration from a condition of poverty and sterility. Nature adds her confirming testimony to that of man, as the richest soils, *cæteris paribus*, are those derived from the decomposition of calcareous rocks. The superior richness of soils derived from calcareous rocks is strikingly exhibited in the Knobby and other mountains of Virginia, the summits of which consist of limestone, but whose sides are flanked with sandstone. The height to which the sandstone ascends on the side of the mountain, and the boundary between it and the limestone, can be seen at the distance of miles, being strongly marked by the rich luxuriant vegetation of the latter, and the scattering stinted vegetation of the former. Not unfrequently a rivulet rising in the lime-stone conveys calcareous matter to the soil of the sandstone, thus forming a fertile belt of land in the midst of sterility, and affording a demonstration of the fertilizing power of lime, and a happy illustration of the manner in which nature causes the superabundance of one soil to contribute to the poverty of another. Asmodeus informed Don

* The process pursued at Meudon could be applied without alteration to the white chalky marl which occurs in the northern part of the state. This marl is perfectly free from shells or fragments of shells, and occurs in a pulverulent powder, or friable nodules. This variety of marl is largely developed in the county of Middlesex, near Urbanna, where it contains from 69 to 78 per cent. of carbonate of lime.

Cleofas, that the physicians of Spain had sworn to practise medicine upon no other system than the one then in vogue. Might not one almost fancy that some of the farmers of the present age had taken a similar oath, from the obstinacy with which they adhere to those customs inherited from their forefathers, which they cherish as sacred heir-looms? Many have no doubt been deterred from the use of lime by the unfortunate experiments of those who, judging from their overdoses, seem to have been guided by a philosophy similar to that of the man mentioned by Dr. Combe, who, concluding that the beneficial effect would be in proportion to the number of pills taken, swallowed the contents of the box at a dose. But thanks to the progressive spirit of the age, and the philanthropic labors of those who have zealously devoted their time and talents to the improvement of agriculture, this lamentable neglect of this invaluable substance is daily diminishing, and the farmer is no longer inclined to think, like the lawyer in the 'Heart of Mid Lothian,' that farming, like driving a gig, comes by nature, but is convinced that it is a refined art, requiring for its successful practice the application of some of the most refined principles of physical science.

C. B. HAYDEN.

Smithfield, April 20th, 1841.

A LEGACY FOR YOUNG FARMERS.

For the Farmers' Register.

My sons :—This is the first day of January, it is snowing at a rapid rate, and as my infirmities forbid my being out, I take up my pen again.

When I was about sixteen years of age I thought myself a wise fellow, but when I arrived at the age of twenty-one, I came to the knowledge that at sixteen I was but a silly boy. At twenty-one, as the law made me a man, I thought I was a man indeed, and determined that the world should soon know the fact; but, ah! how silly the thought; for now I know, that at twenty-one I was but as a child. My sons, are you ready to confess yourselves but as children? Are you not apprised of the fact, that the foolish are full of babbling conceit, without reason; but that the wise are conscious of their defects?

Perhaps you have been at the plough these four or five years, yet I wish you to understand that you are not yet graduated, for as it took you some ten or twelve years to graduate in scholastic knowledge, so will it be at least the same length of time, before you graduate as farmers. I do not intend to assert, that one cannot be a farmer unless he literally holds on to the plough handles; but I do assert, that

> 'He who by the plough would thrive,
> 'Himself must either hold or drive.'

Nor would I assert that one cannot learn without a teacher, for of late we read that a blacksmith has, without a teacher, acquired a knowledge of many languages; yet can it be doubted that he would have obtained his purpose in much less time had he received lessons from an A. M.? And so of you as farmers. Be not ashamed to receive instruction from any source, even from an illiterate menial; for although one may be far your inferior in a general sense, yet experience may have made him your superior in a few instances. My heart's desire is, that you become men of business, of judgment, and worth, as soon as possible. To this end, I admonish you to ever keep discretion and reason before your eyes. Travel not in the dark; but always put your reasoning faculties in front, that your pathway may be comfortably lighted. I have however to tell you that in your agricultural prigrimage you will discover many outlets from the old beaten road; some of which you may be disposed to travel, as indicating shorter routes to the point of destination. Well, I have no objection to your trying a few of those paths, whilst yet you are in juvenile years; but I would caution you against running off the track too often, unless reason has a strong light ahead; and again, beware of fox-fire.

My sons, do you remember what a high opinion you had of yourselves when saying your lessons from the New York Reader No. 3? but now how grating to your ears, to hear a school-boy, ding-dong, ding-dong, no punctuation, no cadence, no emphasis. And so of the clump-headed farmer; he can be moved by no other tune than the old lullaby, which his daddy used to sing. Now although I revere the ashes of my deceased father as much as any other man could a parent, yet I know that he, and you, and I, are all fallible beings; therefore it is our duty to 'grow in wisdom;' to 'live to learn,' though it may be a fact (which I very much doubt) that we 'die and forget all.'

It is true that we must plough, and sow, and reap, as did our forefathers; but cannot those operations be better timed? Cannot our implements be improved? Can we not make two blades of grass, or two ears of corn, to grow where heretofore there has been only one? Can we not, by improving our flocks and herds, double our quantum of meats and wool, without an increase of expense? I say it can be done, and let me hear you respond, and say ay, and it shall be done—so mote it be.

When I was young, I put my mind particularly to two things, viz.: agriculture, and perpetual motion. The last I thought was within the reach of man; the first, I thought had nearly arrived at the summit of perfection; but now how altered are those opinions, for I find that agriculture is comparatively in a state of barbarism, and the idea of perpetual motion is perfect nonsense. My sons, although your farms may be somewhat improved, yet they may be compared to so many blank books. Now each for himself has to fill out his book, according to his industry and ability; and each for himself has to set the type, and do the printing. And finally, although each book has, or should have, many chapters, yet as they are continually open to the inspection of every passer-by, so will he read and comment thereon. If your work is badly executed, then the intelligent passenger would fain shut his eyes, till out of sight; but read he must, though as grating as the school-boys' ding-dong—and then come comments, as horrible as Milton's Paradise Lost. But if your work is good, the reading will not be grating, but grateful; and the comments as cheering as Milton's Paradise Regained. If you are a cobbler at your work, you are not only degraded in the sight of man, but your beasts

will upbraid you, by their neighings, and lowings, and bleatings, and squeakings; until you are wont to stop your ears—yea, even thorns and thistles will rise up in your fields and laugh you to scorn; so that you shall desire not only to hide your face from man and beast, but even from nature herself.

I had intended to stop this dissertation at this period, but considering it imprudent to leave you in the briers, I will attempt to show you the way clearly out. If you determine to become neat farmers, and valuable members of the farming fraternity—and why should I doubt it—then give the proof at once, by beginning a thorough course of business, and persevering industry. If briers and thistles, stones and stumps, stand in thick array, ready to assail you at every step, you are to gather up your forces, with their tools, and charge destruction upon them; never laying aside your arms, till every enemy is vanquished, both head and heels, root and branch.

After having cleared the citadel, it is yet necessary that you keep a watch over the premises; for I tell you, that many of the minute men of this pestiferous order, will slily come back to their old haunts; and if suffered to propagate, you will be compelled to expend more blood and grease, before you can say, my premises are my own.

My sons, take care of your domestic animals this winter; so that when I come the rounds next spring, I have not the mortification of looking on moving skeletons. Give them enough to eat, but beware of waste; and remember that there is nothing equal to the master eye.

Keep your yards plentifully littered, so that your corn field may be thoroughly manured. When the ground is in order, make your ploughs move. Finally, take care of yourselves till you hear from me again; and don't let me hear you say, why I don't know, or I reckoned, or I thought, or 'tis time enough; for you know not what an hour may bring about."

AMHERST MOUNTAINEER.

January, 1841.

DISEASES OF CATTLE AND HORSES.

From the American Farmer.

Sir—I send you two invaluable recipes—I say invaluable, because they have never failed in effecting a cure with me, and have saved me considerable property.

Recipe for the cure of bloated or swollen cattle, when occasioned by too free use of green vegetation, or too full use of water after having eaten grain.—Give the animal thus affected, from half a pint to a pint of tar, according to its size and constitution; and you will soon have the satisfaction of seeing the animal entirely relieved. The most convenient way that I have found to give the tar is as follows: Elevate the animal's head, (when lying down is most convenient,) open its mouth, and put the tar as low down in its mouth as possible, with a small paddle rounded at the end; then let the animal close its mouth, keeping its head moderately elevated till it swallows the tar.

I believe tar to be excellent for horses with the cholic, though I am not positively certain that it is. I doubt if I did not save two valuable horses of my own with tar, that were extremely ill with the cholic; but am not certain, as other remedies were used previous to the tar.

Recipe for the cure of sweeny in horses, which is also excellent for wounds, bruises and sprains in horses.—To 1 pint of unboiled flaxseed oil, add half a pint of spirits turpentine, 12½ cents worth of oil of amber, 12½ cents worth oil of spike, 12½ do. oil of stone, 12½ do. camphor—mix them all together—anoint the diseased part of your horse with the liniment made as above stated, nine days, observing to anoint three days in succession, and then miss three days. Immediately after anointing, heat the liniment in well with a hot iron. The several three days that you omit anointing your horse with the liniment, his diseased part should be well anointed with fresh butter; though this may be dispensed with. Previous to anointing your horse with the liniment the second and third times of three days, the whole mass of accumulated grease should be washed off with warm soap suds, and then dried before applying the liniment. The above mentioned manner of applying the liniment is intended particularly for the sweeny. For bruises, sprains and wounds, it may be applied in the same manner that you would use other liniments in like cases. The above mentioned liniment has effectually cured every case of the sweeny in which I have known it applied. T. T. GORSUCH.

Baltimore Co., March 29, 1841.

HORSE DISTEMPER.

From the Kentucky Farmer.

It is an inflammatory disease, and shows itself in young horses by the want of appetite, the dull languid look of the animal, his cough, and then a running at the nose. This disorder always affects the head more or less; it is distinguished into the false or genuine, and the malignant—the first is less a disorder than a purifying of the humors, necessary to all young horses. When the running of the nostrils is not abundant, a tumor is formed under the lower jaw that opens, sooner or later, and discharges a great quantity of matter. That is the genuine or benign distemper—the false or malignant is derived from the first, when it has not been well cured, and re-appears, and is a malady of the same kind, with the same symptoms; if it is not cured thoroughly, it turns infallibly into the glanders, very seldom cured, and devotes the animal to a certain death. The malignant distemper is accompanied with a high fever, a swelling of the head, hard breathing, and the running at the nose is so thick that it comes with difficulty; the animal must immediately be bled, in order to abate the inflammation. The nostrils must be injected with mullen or flaxseed tea, or both combined; it prevents the ulceration of the inside of the nose, and facilitates the running of the matter, particularly if a fumigation is added to the above. It is made in the following manner; boil oats in the mullen tea, or flaxseed, or bran or any other substance which, when thick enough, retains long a sufficient degree of heat; put a small quantity of this wash into

a bag 2½ feet long, and large enough to admit part of the horse's head; a thong of leather or rope fastened to the bag goes over the head like a headstall; the wash must not be too hot as the horse could not bear the steam, much less too cold, or it would have no effect. When after a certain time it is partly cooled, take off the bag, and begin often the same operation again during the day, observing to take the bag off to let the horse snort out the matter, if he is so inclined, and put it on again if still warm enough.

If the tumor under the lower jaw opens of itself, it should be rubbed with the following ointment; beat one or two yellows of eggs with spirits of turpentine, and put some of it on a bunch of tow, held fast by a sort of covering or bandage to keep the cold from the sore; it is necessary to observe that any open sore or wound should be covered to exclude the external air and all kinds of insects. This dressing must be done every day exactly. When the horse is cured, he must be purged once or twice in order to carry off the remains of any venemous matter. Care must be taken to water the horse out of a bucket, if during his sickness he could not stoop his head to drink as usual; as he is feverish, the want of water would increase his sickness and his sufferings. During the horse's sickness, he must be dieted in the following manner: cut straw and bran; his drink, mullen or flax-seed tea, with a handful of bran, sometimes a little salt given milk-warm; if the weather be cold, a sick horse ought to be covered, if possible, or at least sheltered from the cold.

Grass founder or melted fat is an inflammation of the inner soft membrane of the bowels, lined with a mucous substance that lubricates them in that disease and looks like melted fat; it is most common in summer after too much fatigue and over feeding, or too strong a physic; it is the dysentery of horses; the animal dungs with effort, and the excretions are mixed or covered with a sort of jelly, and sometimes slightly bloody—the animal is very thirsty, looks towards his sides which beat violently; loses his appetite, grows poor, and may lose his life if not cured in time. As soon as the disorder is known, the best remedy is injections of mullen, bran or flax-seed; very little hay, no grain. Bran and water—injections and drinks of slippery elm, if the first injection could not be procured. Boiled barley mixed with honey in small quantity, makes a cooling diet and is used with success.

I am with esteem, yours, M. MENTELLE.

ON SALT AS A PREVENTIVE OF DISEASE IN HORSES, CATTLE AND SHEEP.

From the London Farmers' Magazine.

My stock having escaped the prevailing epidemic that has been general in this neighborhood for the last six months, not a single case having occurred among a considerable quantity of horses, cattle and sheep, although grazing in fields adjoining to where diseased stock was depastured, separated by hedges only, and also adjoining a turnpike-road where stock affected with the complaint were constantly travelling; I shall therefore give to the public my impression of the reasons I conceive that exemption is owing to, hoping that others may benefit from the same practice, should my opinion prove correct.

The practice alluded to is, to place plenty of salt within reach of every species of stock, so that they may at all times have it in their power to gratify their appetite for this condiment, of which they are very fond, and consume some quantity, particularly stock that have been accustomed to it, for on putting them into a fresh pasture or yard where there is no salt, on returning to the field or place where they had been used to find it, (even after some time has elapsed) they will immediately make for the spot in search of it.

I am aware that salt is strongly recommended by many writers on agriculture, but is not so generally used as it deserves; one reason may be, the difficulty of keeping up a supply where it is exposed to the atmosphere, as in damp weather it dissolves quickly, and often requires to be renewed.

The best salt for stock (which I make use of) is called at the works, *pickings*: it is in flat pieces, varying from one inch to two and a half inches in thickness, extremely hard and pure; it is an incrustation from the brine adhering to the bottom of the *pan* or boiler, in which the brine is evaporated, requiring great labor to separate it from the pan with sharp mattocks; it is usually ground between rollers by steam-power, and is then called agricultural salt, and is used to a considerable extent on the light blowing sands for turnips and clover.

These cakes or pickings will remain undissolved when exposed to the weather for a length of time from its hardness and fineness of the grain, which gives it the appearance of marble when licked by the stock. The best way is to place it in small stone-troughs, in conspicuous parts of the fields, also in the yards, stable-mangers and feeding-stalls. The price I give for it at Droitwich, is five-shillings per ton, which quantity will supply a great stock for many months.

I think it right to add, that the situation of my farm is high and exposed to the winds, the pastures being large and open; this may, in some degree, secure the stock from infection; but, as I have stated before, they were contiguous to a public road, and also to infected stock; I can, therefore, only account for my perfect exemption from the disease in the liberal use of salt.

RICHARD SMITH.

Upper Hill Farm, near Droitwich, Worcestershire.

COTTON CULTURE IN INDIA.

From the American Farmer.

It is stated, as a statistical fact to be relied on, that in Great Britain there are three millions of people who owe their means of support to labor bestowed in some form, on cotton produced *in the United States.* Seeing this, it is argued that any great irregularity or failure in the price or supply, could not fail to produce serious agitation if not convulsion in that island:—and hence is inferred the constant anxiety on the part of that government, to put an end, as far as possible, to all dependence for the raw material on the productive capacities of any people not under its own dominion. Natural as may appear such a desire to

give all possible encouragement, by the government, to every measure calculated to insure a supply for her manufacturers at home from her own possessions abroad, the conclusion of the treaty between Lord Palmerston and Gen. Hamilton, recognizing the independence of Texas, without any reservation against slavery, in a country so extensive, so fertile, and so well adapted to the growth of cotton, would seem to contradict the idea of any such fixed and long-sighted policy; as it seems also to be at war with her own measures for the extinction of slavery in the British West Indies. For ourselves we are nothing loath to believe, that the young republic on our borders owes much in that, as in other important foreign negotiations, to the superior vigilance and sagacity of her young diplomatist, whose career his been marked equally by energy and address, in a degree unexampled under so many discouraging circumstances, and highly auspicious for the fortunes of the country he represents, as well as, we hope, his own. Be that as it may, it behoves us to look the question full in the face. It is not by blinking it that we can understand the real state of the case, or be the better prepared either to avert or to submit to its results. From a source professedly hostile to the existence of slave labor, and, doubtless, anxious to see its prophecies realized in its own day, we extract some statements, with the deductions of the writer, which invite the attention as well of the practical planter as of the political inquirer. *Fas est ab hoste doceri* is a sound maxim in politics and in war.

"Well known cotton statistics go to show, that the total amount of the cotton-export from this country to Britain in 1840, was 1,245,000 bags, of which 434,642 were from the Atlantic states. The cotton imported into Britain the same year, from India, amounted to 216,495—about one-half the export from the Atlantic states. In 1834, it was only 88,122, so that during the last seven years, it has increased 128,373, or at the rate of 145 per cent. In 1834, the export from the United States to England, was 731,335, and its increase during the last seven years has been 513,692, at the rate of 70 per cent. So that Indian cotton in the British market (says the Philanthropist) has gained considerable on that of America." The British possessions in the East Indies embrace a territory nearly as extensive as Europe, with a population of 150,000,000 of ingenious people; price of labor varying from 1*d.* to 3*d.* a day, and the cotton they consume is computed to exceed the crop of the United States.

In answer to the supposition, that the quality of the cotton of India forbids the fear that she can supply the wants of the British manufacturer, even if the quantity could be produced; the writer before us relies on the authority of various travellers, to whose testimony it would be worse than foolish for the political economist and statesman, not to say the provident planter, to shut his eyes. Some of these follow:

Major General Briggs, who spent thirty-two years in India, explored almost every part of it, and administered the affairs of government, in several provinces, says—"With respect to the means India possesses for growing cotton, it is necessary to consider the extent of the country, the nature of the soil, its vast population, the description of their clothing, and the purposes to which cotton is applied, before we can have any conception of the great capabilities it has of supplying, not only England, but the whole world if necessary." And again he says—"We think enough has been said to show, that there is neither want of cotton soil for the indigenous nor the American plant, and we may with confidence assert, as the knowledge of soils and climate becomes more and more studied and attended to, that India will prove capable of producing cotton of any quality, and to any extent."

Dr. Spray, a botanist, one of the Company's servants in Bengal, recently stated before the Royal Asiatic Society—

"It is certainly without a parallel in the annals of the world, that a country possessing such capacities as India, should have been so long hermetically sealed against the enterprise of Britons, in order to prolong the abuses of patronage. Had the peninsula been open, we should not now be dependent upon America for raw cotton, nor would the country have been brought, as it was four years ago, to the very verge of bankruptcy and revolution, when the stock of cotton was not adequate to three weeks' consumption. To this astounding blunder the southern division of the United States owes its cotton plantations, and its rice-fields, and also the blighting curse of slavery. Evidence confirms the fact, that cotton can be grown in India, fully equal, or rather superior, to the bulk of American."

Kirkman Finlay, Esq., in a communication to the chamber af commerce, Manchester, says—

"India is a country of such vast resources, with such abundance of soils adapted to the cultivation of cotton, such a variety of climate, and such an immense laboring population, that it appears of all others best fitted to become a cotton-growing country, and to send an article of the finest quality, and in the greatest abundance."

Mr. John Gladstone, an authority in commercial matters, says—

"For the supply of the raw material we are almost wholly dependent on foreign countries, whilst we have and possess in the British dominions in India, resources sufficient to supply all we require, and to an increased extent if demanded—resources that are within our influence and control, and where the only limit to the consumption of British manufactures is the ability of the natives to pay for them; whilst we possess at the same time the means to stimulate and increase our intercourse with safety and advantage to the empire at large."

Mr. George Ashburner, in a paper read before the Asiatic Society, remarks—

"Labor in central India is cheaper than in almost any other portion of the world; the wages of an able-bodied man being only three rupees [six shillings sterling]. per month. It has been estimated, therefore, that Berar cotton may be cultivated profitably for 30 rupees per candy, or or rather less than a penny a pound!"

The next question for the American investigator of a question of the deepest interest is, what obstacles have prevented the developement of capabilities in India to supply the country, under whose government she groans, with an article from which, were she suddenly cut off, the very existence of that government would be endangered. An answer to this inquiry in the view of

the writer before us will be found in the extracts which follow, and if well founded would appear to account fully, as well for deficiency of supply, as for defectiveness of quality.

In our next we shall present the views of this painstaking writer as to the measures and causes which may be expected to operate in the removal of the obstacles here designated, and to insure to Great Britain an ample supply of this great staple of our slave holding states from a region under her own control, and of a quality to meet all demands.

"The chief obstacle however, to cotton-growing in the East, and indeed the great cause of most of the evils of India, lies in the nature of the government that controls its destinies, a government which acts, not for the benefit of its subjects, but the aggrandizement of itself. Wresting from the natives the proprietorship of the soil, it imposes on them taxes under which no people could flourish. It subjects them to a system of forced labor and purveyance, which, allowing no security for property, takes away the motive to its accumulation. The insolence, exactions and cruelties of its officers in many cases leaves no refuge to the miserable native but absolute poverty. Nothing scarcely is planned or executed for the good of the country; a few nabobs think themselves entitled to coin money out of a hundred million people, though their policy, so far as the accumulation of wealth is concerned, is scarcely so wise as the slave system of the south. The virtual assumption by the government of the proprietorship of the soil, is the root of the mischief. It has proclaimed itself the universal landlord, and affirmed its right to take from its tenants what it will. Before the country came under British rule, the Hindoo or Mahommedan sovereign claimed as a tax, a limited portion of the crop of every man's field, leaving not less than three-fourths to the farmer. The British government takes the whole matter into its own hands—fixes an assumed capability in every field to produce, an assumed price on the produce itself and then exacts from 35 to 45 per cent. of the money value of that produce as its share for ever;—and all this, without any reference to varying crops or prices! When the produce exceeds the amount previously fixed, the assessment is increased. When an individual fails in the payment of this tax, it is collected off the village. When the crop of a whole village is deficient, neighboring villages are compelled to make up the deficiency. 45 parts in 100 of the gross produce of the soil are taken by the government. As to the cultivator, his average share of the gross produce is stated to be generally from five to six in a hundred! The tax too is demanded in money; a most grinding hardship in a country where the people depend more upon barter, than a circulating medium.

The effects of the land-tax are represented as most destructive. Villages, in times past happy and flourishing, have been desolated by it, and the cultivators in numerous districts driven from their farms, so that large tracts of land once occupied, are now covered with jungle and ranged by wild beasts. It has beggared the industrious ryot, and converted him into a robber or assassin. And there is perhaps not one of the many famines under which India of late years has groaned, that may not be traced to its blighting influences. In 1827-8, a famine prevailed in the north-western provinces of Bengal, which carried off, it is said, 500,000 human beings, more than the whole population of Illinois. And yet the same year, as much grain was exported from the lower parts of Bengal, as would have fed half a million of people, at a pound of rice a day, for a whole year. The Oriental Herald for February, 1839, states, that "in 1819, there were 19,676,076 beegas, or about 6,558,692 acres of waste land, in the very provinces where half a million of human beings died last year from actual starvation." While immense tracts of fertile land have been abandoned, and others suffered to remain the haunts of the tiger and jackall, the natives of the country, the real, *bona fide* proprietors of the soil, are not allowed to bring any portion of them under cultivation, except on payment of whatever amount of taxation may be imposed by the government, which is so heavy as in many instances soon to drive off the new settlers.

The pertinacious adherence of the board of directors to this ruinous system, seems to amount to madness. In the year 1835, Sir Robert Grant issued a proclamation, offering to those who would cultivate waste land, freedom from taxation for five years, and from half the usual amount of taxation the next five. After the natives had overcome their distrust of this strange kindness on the part of the government, they began to avail themselves of the offer, and, under a system which secured to labor its just reward, soon showed what they could do. The court of directors, however, in less than three years, as if bent on keeping down all improvement in the country, ordered the offers to be recalled!

The Rev. Howard Malcolm of Boston wrote:

"Feb. 1837. A more beautiful country than that from Cuddalore to Tanjore, (Madras,) cannot possibly be imagined. The dense population and rich soil give their energies to each other, and produce a scene of unsurpassed loveliness. But the taxes and other causes keep down the laborers to a state below that of our southern slaves. The government share of rice crops is, on an average, about 60 per cent.! But the mode of collection in money causes the cultivator to pay about three-fourths of the crop."

This grinding land-tax, then, destroying, as it does, the hope and energy of the laborer, and weakening the motives to the exercise of skill and carefulness, is the first and greatest obstacle to the free growth of cotton in India.

Several other obstacles may be noticed.

1. The almost absolute dependence of the cultivators on their bankers. The grower of cotton, in the beginning of the season, without seed, without money, is obliged to apply to the village banker, who lends his money on condition, first, that he receive exorbitant interest, secondly, that the entire crop be sold to him in advance, at a low price. Such a bargain, of course, takes away all motives to carefulness in raising and preparing the cotton, inasmuch as the grower knows that he will get no more for a good than bad article.

2. The revenue officers frequently will not suffer the crop to be touched, till security be given for the payment of the land-tax. Meantime, the crop ripens; the cotton falls to the ground, and, becoming mixed with leaves and dust, is greatly deteriorated.

3. The country is without good roads. There are no facilities for carrying the cotton of Central India to the coast. Raised in Berar, for instance, it has to be carried to Bombay, 600 miles, on the backs of oxen, the journey occupying 75 days, and the cost of conveyance being 80 per cent. on first cost. And it not unfrequently happens, that heavy rains overtake it on the way, so that large quantities are annually destroyed or greatly damaged. The finer kinds, it is said, are far more injured by the rains than the inferior; hence another inducement to send common cotton.

4. The cotton is often seriously injured by being brought into the government yards, where, if the owners cannot immediately pay the taxes, it is buried in the ground, no straw or matting being interposed between it and the earth.

5. It is stated, that in Egypt and Peru, cotton could not be grown at all, without the aid of artificial irrigation. No good cotton is imported into Great Britain from warm climates, which has not been irrigated. In India, as if to compel the growth of common cotton, irrigated lands are doubly taxed, sometimes trebly or quadruply.

Mr. George Thompson thus sums up the difficulties in the production of cotton.

"Now look at the difficulties in the way of growing cotton: First, the absence of proprietary right in the soil. Here is the master-evil; here is the great injustice of our administration in India, depriving the natives of the soil of their right to that soil; utterly despising them; sweeping off all the great landlords and all the little ones together; reckoning directly with the cultivator of the individual field, and taking from him at least 45 per cent. of the gross produce of the soil. Then, the heavy and fluctuating assessments; then the utter dependence upon the village bankers, producing, as you have seen, carelessness in growing, in packing, and in cleaning the cotton. Then the damage done to the cotton on its journey from the interior to the coast.

"Then the insufficient accommodation, or rather no accommodation at all, which it finds when it has arrived at the coast; for you have seen, that in Guzerat, though a part of India as well managed as any other part, it is tumbled into a pit covered with lumps of earth, and there it lies to contract moisture, and it comes up in a state perfectly unfit to be packed and embarked for this country. But again, there is the want of care, on the part of the natives, I admit, in respect to soils and situations; then the non-introduction of foreign seeds, which is a very important part of the business; then the want of the means of transportation; then the negligence and caprice of the revenue officers, who often, through mere disinclination, refuse to assess the cotton, until it is very much injured in its quality; then the want of an efficient system of civil administration, so that the individual who is injured can obtain no redress, and must apply, if he does apply, to a man who has rather an interest in oppressing him, than in redressing his grievances. Then the fact that cotton is propagated for ages upon the same soil and from the same seed. Add to this the insufficient care paid to the rotation of crops. Then add the fact that other crops are grown along with the cotton crops, which interfere with the health and productiveness of the cotton."

None of these hindrances, it will be observed, is inherent in the nature of the soil, or character of the people. A wise government could remove them all. Still, despite of their unhappy influence, the exportation of Indian cotton to Britain, has increased, as we have seen, during the last seven years, at the rate of 145 per cent., while that of American cotton has advanced at the rate of but 70 per cent.!

DESULTORY OBSERVATIONS ON THE BANKING SYSTEM OF THIS COUNTRY, AND THE EFFECTS OF ITS DIFFERENT MODES OF OPERATION. ADDRESSED TO THE CONSIDERATION OF THE AGRICTLTURAL INTEREST.

Continued from page 244.

Banks of circulation.

III.—Having stated and described the important benefits derived from the operations of banks of deposite and of discount, we now come, next in order, to the consideration of the third great operation of banks—that of *issue*, or *circulation*—or of creating and supplying to the country a *paper currency*. This, though always and universally a legalized operation of banks in this country, is an illegitimate part of their business, not necessary to their other proper and always beneficial action, and which, in any degree of extent, if not always injurious to the community, is certain to become so by its excess; and which excess has never yet failed to follow a commencement of the privilege of creating and issuing paper money for private benefit.

"A *bank of circulation*," says Mr. Raguet, in his excellent 'Treatise on Currency and Banking,' "is an institution established solely for the purpose of lending *credit*; which is performed by exchanging its promissory notes [bank notes] payable to bearer on demand in coin, or giving transferable credits on its books, also payable on demand in coin, for the promissory notes of individuals, payable at a future fixed day, the latter paying a percentage per annum, equal to the interest on a loan of capital, for the advantages they consider themselves as enjoying by dealing in the market with the credit of the bank instead of their own." All the banks of the United States, (except the savings' banks,) are banks of circulation, and combine that operation with those of discount and deposite. And it is the real profit to the banking interest, derived from this power of creating paper money, and the supposed benefit of its creation to the public interest, which give to the existing banks all their hold on public favor. The other, and real and important benefits of banking are scarcely thought of, in comparison to the delusive fascination of prospective wealth supposed to be offered to the community by the creation and increase of paper money by private individuals. It is this privilege of issuing their own notes, not bearing interest, as money, and the certain effect of such issue in substituting and driving abroad the gold and silver coin which formed the previous currency of the country, which give to the banks of this country all their dangerous power and

baneful operation; and yet it is this one office of fabricating currency which constitutes the great merit and public benefit of banks, in the opinion of those persons who most strongly advocate the general procedure of the banking system of this country.

VI. The three operations of banks as combined, either in legal and honest banking, or illegal and fraudulent banking.

The definition given above of a bank of circulation applies however only to such as comply, and but so long as they continue to comply, with the proposed object of their institution, and their obligation *to pay their notes on demand in specie.* Even when so complying with all their obligations, the evils and the dangers of banks of circulation are still impending, and their occurrence inseparable from the system, although in its most perfect state. But the impending dangers are fully realized, and the previous evils are increased beyond computation, when these banks have ceased to comply with their obligations, as all in Virginia and nearly all in the United States now have done, either avowedly or virtually. The above definition therefore does not apply to banks such as ours now are, and are like long to be—issuing notes for which the banks *promise to pay* on demand, but which they *do not pay* and cannot expect to pay for years to come, if indeed ever. It should therefore be borne in mind by the reader, that the name and character of a bank of deposite, of discount, or of circulation, or combining all these three operations, *is deserved only by such institutions as truly conform to the design of these several operations.* Such would form another general class, exercising the business of *legal and honest banking*; even though their operations in point of fact may be unsound, illegitimate. more or less injurious to the public interest, and still more dangerous, in tendency to the greater evil of running into *illegal banking*, and *fraudulent banking*, whether it be afterwards legalized or not—and to which latter grand division now belong all the banks of Virginia, and nearly all of the United States. This, which we designate as the *fraudulent banking system*, then requires a very important modification of the foregoing definition of a bank of circulation. The operation of a bank of circulation, upon this the more general system, is to exchange its notes (which carry no interest,) and which it *promises* upon their face to pay on demand, but *does not* pay, (and is protected by law in the refusal to pay, and from all efficient penalty or reparation for the wrong,) for the notes of individuals which bear interest, and of which the payment is strictly enforced, both by law and usage.

If the banks had been at first established upon this non-paying principle, there would have been something like *honesty* in the course pursued. Borrowers and the public generally might then at least have exercised their discretion, and have chosen upon true grounds, whether or not to receive paper, as money, which was avowedly irredeemable, and dishonored and discredited by the issuers from the first outset. But, on the contrary, the banks complied with their obligation to pay specie on demand, until the confidence of the public had been secured, and until the whole circulation of the country had been filled almost exclusively with this paper currency, and it had had its sure and inevitable effect of substituting and driving off the previous metallic currency of the country. Then, when pressed by the just consequences of their gambling speculations, and other misconduct, or urged by the desire to make larger profits than legal or honest means would permit, the banks *refused* to pay their notes, which were in circulation to the amount of many millions of dollars, and which indeed formed the almost entire currency of the country. There never was a more gross and enormous fraud perpetrated on any people, than was exhibited in each of these bank suspensions; and each and all of which have been afterwards legalized and sustained by the governments of all the states of the union.

VII. The best and safest course of banks of circulation illustrated.

But these remarks, on the existing state of fraudulent banking and irredeemable paper currency, are in advance of the regular order of the subject. Let us therefore return to the operation of banks of circulation, while they really and truly continue to pay on demand the sums promised on their notes.

It is easy enough to understand how a bank makes profit by issuing more paper than the amount of its capital stock, and that the greater the excess of the issues, if the notes can be kept from being returned to the bank to be redeemed, the greater will be the profit.

Suppose the actual and proper amount of currency of a country to be 10 millions in gold or silver coin. Banks of circulation are then first established, whose capital amounts to 5 millions, with the usual legal privilege to issue three times the amount of their capital in paper, or 15 millions. Suppose that there is paid into the bank, and afterwards retained there, (both of which suppositions are monstrous, and will be universally false,) the whole 5 millions of capital stock in gold and silver, and that the banks use their privilege of fabricating paper money so moderately that they issue and keep in circulation only twice as much paper as the amount of their capitals, or but 10 millions of paper money.* Then the ef-

* The capital of no bank has been paid in specie, in any case, and generally but a small proportion of it was in specie. After paying a small part in specie, the usual course is for the stockholders to *give their notes* for the balance due. In many cases, (though not in Virginia,) the stockholders have done still better, and paid scarcely any thing; they merely executed their individual notes to the bank for their entire payments, due *in specie*, and gave their certificates of stock as sole security to the bank. Of course there never could have existed the least degree of responsibility of such a bank, and its circulation was a mere means for levying contributions upon, or of swindling and stealing from the community, from the beginning to the end of the bank's career. The other supposition above, of a bank's retaining all its capital in specie, or even one dollar in specie for two dollars of the paper in circulation, is never approached in practice; and was assumed above merely to illustrate the operations of a bank of circulation when *in the best possible condition of responsibility.* An indication of the actual practice may be seen in a recent "bank relief"

fects would be, first, a permanent abstraction of 5 millions from the original specie circulation of the country, to be kept in the vaults of the banks, and a simultaneous filling the void thus created with 5 millions of paper; and, next, overflowing the channels of circulation with 5 millions of paper more. There would then be 5 millions of specie kept idle in the banks, and of course forming no part of the actual and useful currency, and 5 millions more of specie and 10 millions of paper in circulation, or 15 millions in all, for a community for which 10 millions had before served all the purposes of trade and business. Now the first question is, would this whole amount of money, thus increased 50 per cent. in quantity, *remain in circulation, or not?* Many of the borrowers and would-be-borrowers from banks, and most of our legislators also, believe that the newly added quantity of currency would remain in circulation; and believing also that *paper promises* are *money*, and that the increase of such paper promises is an increase of national capital, they infer that the country will be so much the richer by this addition of 5 millions. On the other hand, all political economists, even of opposite schools, concur that the surplus 5 millions *could not* remain in circulation; because, there being more money than was needed for the wants of circulation, money, like any other commodity, would fall in market price; and if it fell only one per cent. below the value of money in other countries, that depreciation would be enough to cause it to be exported; that is, used to purchase foreign commodities, or be otherwise vested abroad, until all the surplus 5 millions had been thus disposed of. But as the bank notes would be of no value abroad, they would remain, and the 5 millions of metallic money would be exported —thus leaving the country with precisely its original amount of circulation, 10 millions, but the whole of it in bank paper, (as yet redeemed when required,) instead of 10 millions in specie as formerly. Still, however, there being as yet entire confidence in the banks, their notes would not be returned upon them faster than they could be re-issued, and no evil would be very manifest in this thorough change from a metallic to a paper currency. This state of things would present the best possible condition of the banking system, embracing the operation of issuing and circulating paper money; and for the present we will leave it in that condition, to consider the effects on both banking interests and public interests.

We have supposed that the bank has issued, and keeps afloat, on an average, 10 millions of bank notes; and that the public confidence is so great that the specie in the vaults is not reduced by demands for payment below the average amount of 5 millions. All the paper money in circulation had been issued in discounting business notes, or in more permanent loans—and therefore the bank is receiving interest on 10 millions, and its specie capital kept on hand is 5 millions, which was the amount advanced by the stock-holders. The banks receive from this new source of circulation, (besides their previous and fair profits derived from discounting or deposites,) the interest of 10 millions, or of an additional 5 millions over and above their capital paid in. Or, if having regard to their actual capital of 5 millions alone, they receive, from their borrowers, interest at 6 per cent. on 10 millions, or what is equal to 12 per cent. on their actual capital stock of 5 millions.

Therefore, even upon this supposed excellent condition of things, more favorable to the strength and responsibility of banks than ever existed in a single real case, the gross receipts of the banks from borrowers and the community, would be, by privilege of law, just double the legal interest on their capital. This is in addition to all other fair profits derived from discounting on deposites, or in any other less legitimate mode. If they issue three times the amount of their capital (as is authorized by law) instead of only twice the amount, then still another 6 per cent. would be added to their gross receipts; and if, instead of retaining their whole capital in specie, (as supposed) they should keep only one-third of it, (which is full as much as is usual, even for specie-paying banks,) then 4 per cent. more on the whole capital would be made by lending the proportion thus released.

VIII. The partners in the banking business who gain, and those who lose the profits.

But though the law of the land and the usage of the banks would permit all the above supposed amount of gross receipts, as interest on the capital stock and circulation, it is very true that the gross income, and still more the net dividends, of the banks of the United States have never approached to such an amount of annual profit. Indeed, banking in this country has been on the whole an unprofitable business to the stockholders as well as injurious to the community. The Bank of Virginia, with all its branches, from its institution to this day, has not cleared 6 per cent. per annum on its capital. But that is because, in the first place, there are so many banks (or banks having so much stock, which comes to the same thing,) that none of them can exercise any thing like the amount of privileges that the law allows to all; and where the plunderers are many, compared to the booty to be gained, the dividends must be necessarily reduced in proportion to the number of sharers. Next, the officers and directors of the banks have been so improvident and careless, that the greater part of what might have been net profits to the stock-holders has been squandered in high salaries to officers (often sinecurists, or incapable,) and other unnecessary expenses, lost by numerous bad debts, or stolen by bank functionaries. Thus, though the people have paid enormously for their support and profit, it may well be the case that the stock-holders have received even less than in other unprivileged directions of labor and investments of capital. Yet, the small amount of general or average profits made by the stock-holders of banks is often used in argument as evi-

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law (of last February) of the Virginia legislature, which *repealed*, as being too strict and burdensome, the previously existing provision that the banks should keep on hand as much specie as *one-fifth* of their amount of notes in circulation. This restriction was repealed almost without opposition; and now the banks, released from the requirement of law in this respect, and from the demands of note-holders, by the "suspension of specie-payments," may issue $100 in notes for one dollar of specie, without any restraint whatever, except such as the interest or the fears of the banks themselves may impose.

dence that banking privileges are not too great, and that the country has paid very little for the public benefits of the banking system. So because highwaymen and pirates generally live and die poor, it might as well be contended that they had taken but little in their course of business, and that society had suffered nothing from the particular direction and long continued exercise of their industry.*

If by the profits actually received by stock-holders were to be estimated and determined the measure of privileges to be allowed to the banks for their (supposed) benefits to the public, and for the fair remuneration for capital so invested, then these privileges and profits have been too low, and ought now to be increased, instead of being limited and reduced. The stock-holders, as such, on the whole, have derived but little profit, (less indeed than legal interest,) from their stock; and, as a body, have been almost as much cheated and plundered as the community in general, by those who enhance the prices of stock, and direct banking operations, and as borrowers and speculators, or stockjobbers, continue to appropriate to themselves the rich harvests of gain. The banks have been managed not for the benefit of their stock-holders, as much as for that of their officers, directors, and the borrowing, speculating and stock-jobbing classes in general. And who are they who constitute the great body of stock-holders? Not merchants, or bank directors, or officers, or brokers, or stock-jobbers. All these have too much need of their money for other active business, yielding larger returns, to hold much, if any, bank-stock. A few shares, merely to make one eligible for the office of director, are the most that any of these persons would care to hold permanently. They all prefer to pursuade and induce others, who have more spare money and less information of the tricks and hazards of the game, to hold the stock for their use and benefit. Though some few rich capitalists are large stock-holders, more generally they belong to the poorer than the richer portion of property owners. The stock is bought (and generally at prices much advanced by the false pretences of stock-jobbers) as permanent investments for widows and their children—by fathers for their daughters, as a provision for them when left friendless orphans, and otherwise destitute—by patrons and directors of charitable institutions, and designed to support the already destitute and miserable—and by numerous individuals of scanty means, to the amount of their small accumulations of earnings, made by hard labor and strict frugality. These are the different classes of people by whom, or for whose benefit or support much the greater part of the bank stock is held, and for whom the purchase was made upon confidence that the then usual profits of the stock would be permanent; and under the belief that the connexion with, and the guardianship of, the government, and the high character of the presidents and directors of the banks offered an ample guaranty for the faithful care of the property so invested. And the great losses, or absolute ruin, of all these innocent and helpless sufferers, which occurs whenever an expanded banking system bursts, (as in late years and now,) forms one of the most deplorable and afflicting of all the unhappy and sure results of the general operation. Further—the numerous and wretched sufferers of this class have to bear twice as much as the average loss upon the stock. For their purchases are invariably made in stocks of the best established reputation; yielding, then and long before, good and regular dividends; and of course the price of such stock being at the time much above par. Should the price, after the purchase, rise 20 per cent. higher, these owners never sell for the advance, but cling still more anxiously to what appears so valuable a property. It is only when the stock has fallen perhaps to one half of what they bought at, and is yielding no returns whatever, that these deceived and impoverished and suffering stockholders are forced by necessity to sell out, to avoid starvation, if that is their all—or, if the possessors of other means, for fear of entire loss of the value. Then the stock is bought by those who rely for its resuscitation on the future and usual dishonest operation of the system, and the support of it by the laws; and when, by such means, the price again rises, these latter holders know that it is time to sell out to a new race of other credulous dupes. Thus, the class of poor and cheated stock-holders, not only lose in proportion to their very large amount of the whole quantity of stock, but also they suffer the utmost by depreciation of market prices. Thus they bear, in common with the community, a full share of the cost of the system; and the rich and numerous prizes in the game are won by other classes. Skilful stockjobbers receive the benefit of the changes of prices of stock; and the *paper kings* who direct or influence banks, and the borrowers for adventurous speculations, and the bankrupt debtors, are they who have enjoyed nearly all the profits, and the squandered booty of the banks.

But the most deluded, stupid, and heaviest loser as a stockholder in Virginia, is the state itself--though deriving (apparently) so large a part of its revenue from the profits of banking. To obtain this benefit, the state exclusively bears all the enormous expenses of legislation for banks, and of that of administering justice for, or upon, or because of the proceedings of, banks. These offsets alone would take off a very large share, if not all the clear profits on the state's stock. The far greater injury sustained by the commonwealth, and the people at large, belongs to another part of the subject, and will be considered hereafter.

But it is full time to return from this digression, and anticipation of results, to the banking system where we left it, in the highest possible state of prosperity, for itself, and apparently for all the interests of the country.

* Let not the ascription of a particular evil to the number of different banks be construed into an expression of preference for centralization, or the system of one bank only, with branches. Under a proper and honest system of free banking, such as will be presented hereafter, several banks would certainly be better than one only. But upon the present system—which is almost as bad for the stock-holders as for the country, and profitable only to stock-jobbers, bank officers and sinecurists, bank borrowers and bank thieves—it is truly stated, as above, that the more numerous the banks, the greater the waste and expense to the stock-holding interest; and the less the amount of profit of every kind that will fall to each share of those who are entitled by law to the dividends.

IX. The most prosperous condition of the banking system.

In the previous view taken, we had reached a point in the progress of general banking in which the operations would be the most highly profitable to the banks, and, for such profit, the least injurious to the public that could be expected under any such circumstances. It is true that, even on this supposition of the most perfect condition of things for the system, the public interest, (other than the separate banking interest) *had gained almost nothing* by the change. With all our horror of a currency either exclusively or principally of paper, (because of the certain and inevitable evil tendency and consequences,) we may freely admit that, on our supposed case, no very important injury has yet been sustained by the country, when its banking operations have only gone thus far, and when no foreign or other cause has yet assailed the unsubstantial fabric of an almost exclusive paper currency. The condition of things supposed above was, that the banks had cleared the additional profit of the interest of 5 millions of factitious paper issues, and that the public had so far lost nothing, and had gained all the benefits and conveniences, such as they may be, of a paper currency substituted for a metallic currency.

The only important gain, so far, by this entire change of currency, is the new paper money capital of 5 millions created and employed by the banks. The interest on this newly created capital is so much clear profit to the issuers. The public has gained only so far as the whole community is always benefited by the fair profits of each individual; and as the increase of individual wealth is also the increase of public or national wealth. The issue and use of this 5 millions of paper, in addition to the amount of the capital stock of the banks, has permitted, and indeed compelled, the exportation of 5 millions of specie. Now, by thus dispensing with the costly use of this amount of specie, as currency, and by substituting a currency which costs almost nothing to supply at first, there is made an annual saving to the community equal to the interest of the 5 millions of specie, or the price paid for its former use.*

Now the question is, and the only questionable matter, whether this amount of gain to the nation is more or less than equal to the risk and danger incurred by giving up the use of a substantial metallic currency, having an intrinsic value that can never be lost, or even materially impaired, for the unsubstantial, uncertain and fluctuating value of a paper currency. If the true answer should be that the profit of the substitution is indeed greater than compensates for the danger, then there is a balance of national benefit and gain. But if not, then is there no public or general benefit, nor any other benefit except to the banks, which create and issue the paper money. There is high authority for the former opinion; but we entertain no question that the latter is more generally true, even if the difference of cost of the two currencies be never so great.

X. Some exceptions to previous general positions and statements.

From the wish to be as concise as was consistent with clearness, we have passed over, without alluding to them, some exceptions to general positions, and partial deviations from general conditions of things, which every thinking reader would allow for and supply, but which may be seized upon as false, and as vital objections to our general statements, by that class of personswho always seek to find and to oppose merely the weak and immaterial, and not the strong parts of an argument. To exclude such cavilling, it will be mentioned here, once for all, that, in our illustrations by supposed cases, we have described things as entire and complete, which in fact can never be otherwise than incomplete—and quantities and values as fixed and known, which are unknown and continually fluctuating in amount. Thus—though there must be at any one period a certain amount of currency necessary for the healthy and proper exchanges, trade, and business of a country, the amount so needed can not possibly be known; and even if ascertained fairly for a certain day, it would be different perhaps the next day—expanding with the growth and prosperity of business, and contracting under adverse circumstances. And the actual amount of currency, if left to itself and not affected by the abuses of paper issues, will be regulated and properly and speedily adjusted in every commercial country; so that there will never continue long either a deficiency or redundancy of currency, for the exchanges and healthy trade of the country. If the currency be more plenty than in the commercial world generally, it will depreciate in value, and be sent abroad to be used where more highly valued and prized, until the balance is restored by the exportation of the redundant quantity. If an exclusive metallic currency be deficient in amount, it will appreciate, and make it profitable to bring specie from other countries where it is cheaper, to be used in purchasing commodities in the country needing specie and

* It is to give full weight to the advantages claimed for banking by its advocates, and to avoid raising any doubtful objection to them, that the above admission is made, that a paper currency is much *cheaper* in use than a metallic currency. Our argument can afford to yield this point, and therefore we do not care now to dispute it. But, if fairly examined and compared, we think it not an improbable issue that a paper currency would be found to have not much, if indeed any advantage in regard to cheapness. The price paid for a bank currency is not merely (as usually counted) the cost of the paper, the engraving, the printing, and signing, and the repeating these as often as required by the wearing of the frail material. This is the cost to the *bank* only. To the *community*, there are other and much greater sources of loss, in the greater liability of paper money to be destroyed by fire or other accidents, (all of which losses are so much clear gain to the banks,) and the cost of the misdirection and waste of skill, talent and labor, in counterfeiting, and the losses by receiving counterfeit notes, the cost of executing justice upon such new crimes, and also the evil to society in the inducing of such crimes. All these different ingredients of price would probably make up an annual amount not less than the interest of the whole circulation, which, added to the wearing, would constitute the annual cost of an entire metallic currency.

therefore paying for it a higher price. And thus, if legal restrictions and monopolies, and excessive issues of paper money did not prevent, the amount of currency in any country would never injuriously vary from the quantity needed.

Again—we have supposed the case of the entire currency of the country having been changed from metallic to paper, which could not possibly be true, so long as the paper is convertible to specie on demand from the banks. The greatest possible extension of banking operations, and with the aid of paper of the smallest denominations, and the most perfect state of popular confidence in the banks, could not effect so complete a substitution as we assumed merely for illustration, and to avoid embarrassing the general operation by continued reference to the partial exception. Instead of the whole (formerly) metallic currency of 10 millions being substituted by paper, it would be more likely that about 9 millions would be so substituted, under circumstances the most favorable to the operation, and that one million of specie would still remain in circulation, and passing to and from the banks, as well as between individuals, to serve for change, and for small dealings. This quantity of specie would vary according to the size of the lowest denomination of paper money permitted by the law. If there was no bank note permitted of less amount than $5, the average amount of specie in circulation might be one to two millions in a currency of 10 millions. If notes for $1 were permitted, and issued in plenty, every silver dollar would soon disappear, and not one-tenth of a million, and that in parts of a dollar, would remain as currency. And even this would vanish, if as small bank notes were issued as a substitute. If, on the contrary, no bank note under $50 were issued, gold and silver would be necessary for all transactions of less amount; and as these (from their number) would very far exceed all larger transactions, that restriction on paper issues, alone, would keep half, or perhaps three-fourths, of the whole currency in specie. The proportion of the general currency which would continue metallic, whether large or small, according to the different circumstances named, would then be so far an exception and offset to the foregone supposition of an entire substitution of specie by paper.

XI. Beginning of depreciation of paper money, and decline and prostration of banking credit.

In the preceding pages we had traced the progress of banks of circulation to what their advocates would consider the highest possible state of their prosperity, and the best possible condition of the banking system. Next is to be observed the turn of the banking tide—which will as surely follow, as the ebb of the ocean must come after the flood.

The condition of things before supposed was, that the banks had filled the circulation of the whole country with their paper money, but had not permanently overflowed the channels—(because of the outlet of specie to foreign countries—) that they had thus substituted and caused the withdrawal from circulation of the specie, but had not, by still greater excess of issues, caused the depreciation of money to any marked or considerable extent. It is manifest that the more of its paper money that each bank can use in making loans, and keep in circulation, the greater will be its profits. As surely, then, as men and banks are governed by self-interest more powerfully than by regard to the interests of others, so surely will each, and all the banks, strive to expand their circulation. And this will be the more certainly and injudiciously done, if there are many banks, than if few, or but one. For, in the former case, each separate bank acts for its own separate interest; and not only in disregard to the general interest of the country, but even in disregard to the general interest of all the banks. Their conductors, (unless indeed not totally ignorant of the first principles of currency,) know very well that *all* the banks cannot (while continuing to pay specie,) add very greatly to the already expanded paper currency. They can only substitute by their paper the specie currency, and add a small excess—which effects we have supposed already produced. But, still, each bank will strive to make its own notes form as large a proportion as possible of this substituted general currency, and of the excess which existing favorable circumstances may permit all the banks to put into circulation. This continually operating tendency to the greatest possible expansion of the currency, (and that a paper currency, almost exclusively,) must, of course, always keep some excess of paper in circulation. If the currency were metallic, or any portion of it that could be spared from the ordinary business of trade, even that slight excess would soon find its way abroad. But paper money cannot be sent out of the country, and therefore the excess remains. The reason why the excess cannot as yet become very considerable is, that the bank notes are as yet redeemable in specie; and if the effect of their excess in circulation is perceptible in causing depreciation of the value of the currency below that of the foreign value of specie, (which is the certain effect of excessive issues,) the notes will be presented to the banks for specie as fast as they are issued in loans, and the specie will be sent abroad, as long as it can be so obtained, and the whole circulation is in excess.

But if nothing worse, more imprudent, more injudicious, or more dishonest, were done by the banks, than the *strictly legal* and *very cautious* course supposed above, to produce reverses to them and great disaster to the country, external causes will sooner or later bring about such results. Various agencies, of frequent and certain occurrence, first affecting foreign trade injuriously, will be extended to this country, so as to require from it large payments, and which can be made only in specie. The particular cause of the demand may be either foreign wars, or other operations which create a greater demand for, and of course a higher price of specie abroad; or it may be that heavy debts have been contracted to foreigners by the banking country, in over-trading, which is a certain result of the previous delusive appearance of general prosperity, and prospective large profits, and which every season of bank-paper expansion always and necessarily produces. It may be the paying the price for any other kind of foregone national folly. If we consider Virginia as the banking country in question, it will never be at a loss for the production of such

a demand for specie. For, whenever a suspension of bank payments occurs in any of the more northern states, it necessarily causes a difference of price there between specie and bank paper, and, consequently, a demand for specie upon our banks, as long as they have notes in circulation, and continue to pay them. Well! Suppose the existence of any one of these many and often occurring external circumstances, (and omitting all supposition of injudicious banking, unusual risks, or fraud, at home,) and let us trace the necessary effects. We had supposed the banks to have 5 millions of specie in their vaults, and 10 millions of paper circulation and liabilities. If they should continue to pay them, their notes will be presented for payment by those who need to pay debts, or make purchases, or sell specie abroad, until the banks' supply of 5 millions will be exhausted; still leaving in circulation, and coming in fair payment, 5 millions more of their paper, which the banks will not be able to redeem on demand; and, *as specie-paying banks*, the institutions would be deservedly deemed *bankrupt*, though they would not be *insolvent*, and, indeed, might have all their capital in safe debts and securities. But to reach this state of things, (even if permitted to be reached at all,) would be a work of time. It would be long before even half the notes, spread over a wide circulation, could be brought back and presented to the banks for specie. The banks would, in the mean time, exert all the means they possess, (and they are many and powerful,) to discourage and prevent demands on them. Not one of their numerous borrowers and dependants would *dare* to demand his just due of specie for a note, even when its value in circulation should be less by 5 per cent. than the specie it promised, and which it could then *command* from the issuer. And every other less dependent and submissive noteholder, who would make and enforce such a demand, would be denounced, by all under bank influence, as if an enemy to the public weal. To prepare for such demands, also, the banks would commence to "curtail" their "accommodation" debtors, and draw in their debts—which mostly (by the abuse of the original and proper discounting system,) had been of such long standing, that the demand for their payment, or even partial reduction, would be entirely unexpected, and unprepared for in most cases. All these curtailed debtors, and all those who were thus debarred from becoming debtors to the banks, would unite in raising a loud clamor that "the country would be ruined if the banks continued to pay specie;" and so general would be the outcry, that the banks, claiming (as always in such cases) to be moved, not for their own interest and profit, but "for the benefit of the community," and professing to be actuated solely by beneficent and patriotic motives, would *stop paying specie*; and refuse boldly, and in defiance of all legal and moral obligation, and even of common honesty, to pay any more of their notes, (their then lying and cheating "promises to pay,") with which they had filled the circulation, while the public confidence in the responsibility and good faith of the banks was yet unimpaired. And then will follow the disastrous state of things which existed during the general bank suspension of 1814 to 1819, and of 1837 to the present time; and which will yet continue to a far remote time, before specie payments will again be truly and fully resumed by our banks.

Whenever such a high-handed act of fraud and robbery of all creditors, and of the public in general, occurs, at first every voice that is heard joins in commendation of the banks for their "noble stand in defence of the interests of the community"—and the bank authorities, stock-holders, mercantile class, and all the borrowing class, (whether in *esse* or in *posse*,) and the newspapers, all unite in this expression of opinion, and swell the cry, until it seems, in the absence of all expressed dissent, to be the voice of the whole community. All other persons remain silent, intimidated, and passive. If any rare exception should be found, in an individual daring to denounce the bank suspension in the deserved terms, and to exert his legal rights as a creditor of the banks, and enforcing the payments of their notes—he, who thus takes the part of his country and the laws, and of common honesty, against falsehood and fraud, will be stigmatized by the bank powers and all their slaves, as if dishonesty and opposition to dishonesty had changed places—and as if *he* were advocating and aiding fraud and pillage of the country, and the bank party opposing the procedure.

And if any portion of the people should indeed venture to oppose this enormous fraud of the banks, by enforcing their (as yet) legal claims, such contests must soon cease. For, as speedily as possible, the government steps in, and pardons the past fraud of the banks, and legalizes the course for such time to come (by renewed subsequent extensions of the limit,) as the banks may require. This has been the course again and again of the legislature of Virginia, and of nearly all the other states of the union; and such is the legal condition of things at the present time.

XII. The proper course for, and the actual course pursued by, suspended banks.

After such a fraudulent stoppage of payments has been effected, and legalized by the government, the banks may then choose which one of two courses to pursue. If, in truth, designing to come as early as practicable (under cover and by aid of their legal protection) to a condition to comply with their engagements to creditors, they will not make any new loans of their then irredeemable paper, (of which every note issued after suspending payments is an additional act of fraud on the public,) and will gradually collect the debts previously due to them. Every debt so paid to a bank in its own notes by a former borrower, would so much lessen its previous paper circulation, and the amount of existing obligations. And when the amount of debts was reduced to the amount of the actual (and existing) bank capital stock, and the deposites regularly in the bank—and when the notes still in circulation promised no more than there was specie in the bank, then the bank might safely resume specie payments, because able to redeem every note that could be presented for payment. It is very true (and herein lies the *great* and only important obstacle to this course,) that this remedy would cut off the source of the profits made by the banks upon their *excess* of circulation; and so it ought. Their solid and fair business, of dis-

counting to the amount of their capital and deposites, would not be impaired—and to that extent is as far as a bank *can* go, with a depreciated or discredited paper circulation, unless in a state of suspension, authorized and sustained by law. But this, the only proper and honest course, has never been, and never will be resorted to by suspended banks, except to such extent only as is compelled by fear of the withdrawal of all indulgence of law, and support by public opinion, and of the results of the forfeiture of all remains of public confidence in the responsibility, honesty and ultimate solvency of the banks. In addition to the profits of the banks being greatly lessened by their pursuing this proper and honest course after and under protection of suspension, the debtors of the banks, and the merchants and traders who desire to become and to remain debtors, would exclaim as loudly against a suspension of lending, and even the most gradual curtailing of old debts, as they had previously done against the banks continuing to pay specie. These people, together with the banks, govern and prompt the newspapers, which again influence and shape the opinions of the great body of the deluded and pillaged community—who have no interest in sustaining, and every reason for opposing, this fraudulent banking system. It follows, therefore, that the banks are always justified in taking the other course, that is, of continuing to cheat the community, by continuing to lend irredeemable paper, because it is supposed that this course is absolutely required by the interests of the country at large.

But in Virginia there is yet a more operative reason, than all the influences just referred to, why the government should always sustain and aid the banks in all their fraudulent suspensions, and other acts of violation of right and honesty, instead of protecting the community against their rapacity. The commonwealth of Virginia is the chief partner—interested to nearly half the amount of the stock in trade—of all the important banks in the state. The income of the state treasury is derived in great measure from the profits of banking; and if these profits were at once suspended, the state would be deficient of half its revenue, and heavy additional direct taxes would have to be forthwith imposed on the people. Of course, the steward of the great sleeping partner, the government, always yields to the representations and advice of the acting and more capable and cunning partners in trade; and therefore the laws regulating and indulging suspended banks are in just such form, and for just such purpose, as the presidents and other master spirits of the banks choose to have enacted. The course aimed to be thus sanctioned, and which has been heretofore and is still pursued by the banks, is to profess and pretend to reduce their liabilities, and as rapidly as is consistent with the public welfare—but, in fact, to make the reduction as little and as slow as possible, for the sake of their own gain. The slow rate of reduction, and of return to honest responsibility, under the most imperative circumstances, will be hereafter seen.

XIII. The mode and rate of bank "curtailing," with the view of resuming payments.

We do not mean to deny, that after the banks have suspended payment, there is great *profession* made, and many and strong manifestations also in particular cases, of great reduction of debts to the banks, which, it is obvious to all persons, *must* be made, if the banks are ever to resume payment, without their bankruptcy being an immediate consequence. But the profession is but a pretence, which is as shallow as it is false. But for the fear of total discredit, and the causing such an out-burst of public indignation as would tend to destroy their iniquitous rule and dishonest gains altogether, the banks would, after suspension, increase rather than diminish their operations. For against such increase, by a suspended bank, there is no valid check whatever. Ever since the general suspension in 1838 the banks have *pretended* to be reducing, as rapidly as possible, their business and liabilities. Yet in all these four years the whole amount of debts due to all the banks of Virginia has been reduced only from $18,000 188 to $15,359,041, or a little more than one-seventh. If no restraint whatever had been imposed by law, or moral obligation, or by any other duty than merely that to the stockholders of making no loans to doubtful debtors, it might have been supposed that the pressure of the times alone would have induced the debtors themselves to contract their "accommodations," and their business, as much as in the small ratio stated above. For, if the preceding year of universal mad speculation and adventure, produced and fostered by excessive bank issues, had required but 18 millions of bank loans, surely the reduced business and spirit of adventure, of the since sobered community, might have been as fully supplied by half that amount.

But even of the small reduction made in the amount of debts to the banks, the larger portion has been laid where there should have been no reduction whatever, (if any new debts were permitted to be made,) that is, on the *business discounts*, required for real transactions of trade, and the purchase of the great agricultural staples of the country. These, the proper and legitimate and safe banking operations, and always beneficial to the community, have been greatly restrained, and discounts for them often refused, that the illegitimate and dangerous *accommodation* line of loans might be the less curtailed.

This important proof of the insincerity of the promises, and hopelessness of effective results of voluntary bank reform, is abundantly set forth in the following statement; which is made up from the official reports of the banks to the legislature of Virginia, published in the journals and public documents. We present for comparison the general aggregate sums from the reports of December 1st, 1836, and of January 1st, 1841, because the first was the report of the time of greatest possible expansion, (and for the year preceding that of the suspension of specie payments,) and the last, made four years after, was during the continuance of the suspension for nearly all the time since the first report, and when continued "curtailing" of debts, and reduction of bank liabilities, were professed to be, and should have been, pushed during that whole interval of time.

On December 1, 1836—

The whole outstanding debts, due to all the banks of Virginia, (omitting cents,) amounted to - - - -	$18,000,188
Whole amount of circulation (bank notes out) - - -	8,930,691

Whole amount of specie - -	1,669,634

Or one dollar in specie for every 5.39 of paper money in circulation.

On January 1, 1841—

Outstanding debts - - -	$15,359,041
Circulation - - - -	7,503,530
Specie - - - - -	2.422,192

Or one dollar in specie for every $3.05 of paper money in circulation.

From these official reports, then, it will appear, that during four years of the continued operation and pressure on the banks of the strongest of all inducements for "curtailing," and reduction of liabilities, (saving self-interest, which opposed,) aided by the so-called *compulsion* of law, the banks reduced the total amount of debts due to them only a fraction more than *one-seventh* of the amount at the previous time of greatest expansion. The reduction of the irredeemable paper currency of all the banks, during the same four years of great effort, was only about *one sixth* of the first amount; and the specie on hand is still only one dollar to $3.05 of paper circulation. If then, such is the extent of bank reduction of liabilities, and improvement of responsibility, produced under such various and cogent reasons for action in these different ways, we leave it to the reader thence to estimate, or infer, how long it will be before the banks, by such a course of reformation, will be enabled to pay in specie, and comply with their now violated obligations, and re-construct their justly forfeited credit and reputation.

It has taken the banks four years to reduce their debts by as much as one-seventh, and their paper circulation by one-sixth, of the former bloated and excessive quantities of both; and these small reductions have been considered (by paper-money advocates,) as so distressing to the community as to justify and make preferable the continuance of all the evils of irredeemable currency, rather than to reduce bank debts even so rapidly. Yet the first blow of the banks' suspension in 1837 depreciated all their notes 10 per cent., and thereby robbed the then holders of the notes (nearly 9 millions in amount,) of just that proportion, or about $900,000; and, in 60 days, that depreciation reached 14 per cent.; and, for exchange on New York, (requiring specie payment,) there was actually paid a premium of 17 per cent. Yet this enormous and instantaneous confiscation of the property of the note-holders was scarcely thought of as a wrong to them—and the act which produced it was hailed as a measure of unmixed relief and benefit to the community!!!

That the general amount of debt to the banks has been so little reduced is not owing to the want of abundance of curtailment actually inflicted upon individual debtors. But while the older banks have reduced their respective shares of the whole outstanding debts, there have been established a new bank with branches, and new branches to the old banks, which have added nearly as much to the debt as the others had operated in reducing it. This is not worth naming, except to avoid the appearance of mistake. We have not distinguished, nor do we care, which bank has most reduced or which most increased its business. We have spoken of the whole banking operation together, and of all the debts to all the existing banks, without regard to the respective shares of the different banks.

Further—it may also be true that each separate bank has been continually and rapidly "curtailing" their debtors, (or some of them,) during all these four years. But if so, the general result shows that they have been, on the whole, nearly as fast making new loans to other persons. Now this double operation, (besides deceiving the public into a belief of the progress of general reduction,) serves in two ways to increase the influence, and forward the objects of the banking interest. The "curtailed" debtors, when made to feel the pinch, cry out with all their might against the banks being compelled to adopt this harsh course, by the requisition of law, and to prepare for paying specie; and all the influence of their class is used to prevent any contraction of circulation and of loans, and of course to continue unabated, for all future time, the dishonest policy of suspension by the banks. Next, the hungry class of expectant borrowers, by receiving new loans, or by the hope of obtaining them, are made fully as zealous for the continuation of that course of banking policy, upon which the extent of their "accommodation" will depend. Thus by curtailing old debtors, that class of bank slaves are made the more zealous and active in the service of the masters; and by making new loans, the equally zealous services of another body of partizans and slaves are secured; and also general support gained from all who only *hope* to become borrowers, though not yet on the favored list.

There never was a more false and even ridiculous pretence than that which is generally received as true, that the continued operation of the banks, on any thing like the same scale of expansion, is necessary for the benefit of the community, or even for the benefit of the debtor class alone. If all the debts to banks which have been incurred in the last six years, had been denied, the applicants for the loans would now generally be much better off than they are. And those persons that were already in debt in 1837, and who have not yet paid, perhaps have not been benefited by such long continued indulgence. Yet this matter is always spoken of as if the privilege of contracting debts, and of continuing in debt for the longest time that the creditor will permit, is the greatest of all possible benefits to individuals, and the operation the most vitally important to public and general interests.

XIV. Effects of bank suspension and irredeemable paper currency.

When the banks all first suspended payment in 1814, under the pressure of a foreign war with a formidable power, the case was novel, and the public were easily deceived by the false and shallow pretences then set up by the banks in excuse. It was not (so it was alleged) that they were not able to pay their notes, but that the specie, thus paid out, regularly and rapidly flowed to the enemy's possession. The latter part of this assertion was as true as the former was false. The excessive issues of paper here had served to depreciate all the currency—and also our armies required specie in Canada, because bank notes were of no value there. Therefore, the specie flowed from the country where it was depreciated, and where it was pushed away by paper to foreign countries

where it commanded a better price, or where it had no such inferior substitute. Thus the banks closed their vaults, not for their own gain, but (as always) on the score of *patriotic devotion to the welfare of the country*—and we, the people, were foolish enough to believe this excuse, and still to confide in the banks' retaining the specie which in fact they had already parted with, and were trading upon as so much additional capital. Thus retaining the misplaced confidence of the people, and having in their power the impoverished and embarrassed governments (both state and federal,) who were willing to justify government loans to any amount in irredeemable paper, the banks were enabled to play a most profitable and dishonest and treacherous game, for some years, when it closed, as the present suspension will close, by causing far more private bankruptcy, distress, and destruction of property, than if the banks themselves had been pronounced and proceeded against as bankrupt, as they should have been, when they first stopped payment.

During that first suspension, by the stimulus of excessive bank issues and redundant circulation, (to which there was no check whatever,) the whole country was made drunk with the spirit of speculation. What was actually the depreciation of redundant paper money was mistaken for a rise in the value of property, of which the prices of course advanced nominally in proportion as the value of the currency depreciated. This gave a new and still increasing spring to speculation; and prices of land in Virginia rose to double, quadruple, and in many cases to ten-fold the previous rates, and this, too, during a time of war, and of general pressure and embarrassment, and when no kind of industry was remunerated, except the making and issuing of irredeemable paper money. Thousands and thousands of individuals were greatly injured, or completely ruined, by buying property at these speculative prices, which afterwards fell, because of general pecuniary distress, to less than the former real prices. The whole population was disordered, and a very large proportion injured in business habits, morals, and in happiness, by this national fever of excitement, which benefited none but the few most cunning or fortunate individual players at the game of speculation, and the banks, whose dividends of profits was as much enhanced as the general rate of profits was lessened. At last, however, the settling day arrived. The losses of the people were beyond computation; and even the banks, who had done all the mischief, had been such injudicious lenders and spendthrifts, as well as cheats and pillagers, that they were for years after in a state of real though not nominal bankruptcy. After having divided enormous and unprecedented profits, for some years thereafter the banks of Virginia could pay no dividends whatever.

The present suspension differs from the first in one important respect. The *public confidence* which the banks then enjoyed, and so greatly abused, they no longer possess, and never can again acquire. No individual now believes in their ability to pay, as in the former suspension was believed by nearly all. Before the beginning and even after the termination of the former suspension, there was so much confidence in the ability of the banks to pay, that few individuals cared to draw specie from them on that ground. Now, if they ever again open their vaults, and, in good faith pay all their notes and deposites, they will be soon drained of all their specie, and then remain undeniably bankrupt, because not able to meet numerous other demands. The banks know this, and will not dare to attempt resumption unless compelled; and to resume safely they must be able to pay in specie "dollar for dollar," for all their notes and debts. Therefore the late recent short-lived procedure was but a pretended resumption, in which the banks avoided making the payments they professed to offer, by disingenuous tricks and contemptible evasions, and which resumption (so-called) they could not maintain even in that discreditable manner. They will probably never resume payments again, in good faith, and cannot possibly continue permanently to pay their notes, if they should so resume.

(To be continued.)

THE GREAT DEFECTS OF THE AGRICULTURE OF LOWER SOUTH CAROLINA.

To the Editor of the Farmers' Register.

Charleston Dist., S. C., March 7, 1841.

I am unwilling to trespass upon your time, which must of necessity be much occupied by a large correspondence, but trust you will appreciate my motives in asking you to publish in your Register, for the information and benefit of your southern friends, a history and description of the corn fields in lower Virginia.

You are doubtless aware that the city of Charleston not only receives no supply of corn from her back country, but that frequently she supplies the country from her importations from the states north of this. A country like ours, thus obliged to obtain its supplies of provisions from a distance, must necessarily remain poor. Our highlands yield from ten to twenty bushels per acre; the latter quantity is considered a good yield. I doubt whether the average product of the whole low country below the falls of the rivers will exceed twelve bushels per acre.

If you have access to a copy of Mills' South Carolina, you will perceive that the map of this district (Charleston) indicates a great number of swamps, extensive tracts of low grounds on the margins of the numerous creeks which feed our rivers. With the exception of those swamps which lie accessible to the tide water, and beyond the region of salt water, none of these low lands are cultivated. Occasionally a planter is enterprising enough to subdue a small portion, and if the season prove good he is successful in raising corn; but unless a general system of draining should be adopted, it is impossible to secure even those few spots. I think that the combined efforts of the planters on those swamps would enable each to secure to himself a permanently valuable field of corn. I have long thought that the draining of those swamps would also contribute materially to the health of the neighborhood. Do the corn fields of lower Virginia lie in such reclaimed swamps, or are they still wildernesses? And if the swamps have been subjected to cultivation, has any amelioration of the public health been thought to follow?

The exceedingly fluctuating price of cotton

am afraid will keep us for ever poor. No one will plant corn when cotton offers such splendid prospects; and when the price becomes depressed, we fancy ourselves obliged to plant more cotton in order that we may make up for the loss in price by an increased quantity. Thus cotton is our grand staple, before which every thing bends. We plant of our poorest lands just as much as we think will furnish barely corn enough to supply our wants; if that fails we have recourse to Charleston. Of course we never have a surplus. This, the vice of the large planters, seems contagious—it is a universal error. A few years since I know that poor men, who should have sold corn, were obliged to buy it at two and two and a half dollars the barrel [bushel?] Is it wonderful then that our splendid enterprises so frequently fail?

I have made several small experiments with lime, with a favorable result, but have not had the pleasure of seeing any marl in the neighborhood. I regret this as much on my own account, as on account of the indication it gives of the low state of agricultural enterprise among us. I have no skill in managing, and the digging of lime is with me a prodigious labor. If any of my practical neighbors would undertake the work, they would doubtless devise schemes for facilitating the labor. If you will tell us occasionally of increased productiveness of cotton from its use, you might stimulate us into using it. You cannot influence us so long as you speak only of its results on corn, wheat and clover. —— ——.

In attempting to reply to the inquiries of our correspondent, we must premise that we know (from personal observation) scarcely more of his region of country than he does of ours—to which he is evidently a total stranger. We have seen nothing of the lands of lower South Carolina, except in the mere glance afforded by the rapid passage upon a railway. But judging from that very insufficient view, and still more from what we have heard of that region, we were strongly impressed with what seemed to be ruinous errors in management, and astonishing neglect of means and natural facilities for agricultural improvement, and consequent profit. It would be presumptuous in the extreme for us, with such limited observation and means for information, to attempt more particularly to point out errors, or to prescribe suitable remedies. For the former we shall rely for facts entirely on our correspondent and other South Carolinians, who have heretofore published statements and just denunciations of their bread-buying system.

The lands of lower Virginia, which furnish a large surplus of the corn which is exported, (after furnishing a plenty for man and beast through this region, where the corn crop supplies the almost universal food,) is generally quite as poor and unproductive as our correspondent describes the lands to be in lower South Carolina. Excepting the marled lands, (which, as yet, form but a small part of the great body,) the average product of all the lands of the tide-water region of Virginia cannot exceed 12 bushels of corn to the acre; and on numerous farms, of which corn is the great and almost only market crop, the product does not exceed 10 bushels. Many persons throughout their lives cultivate considerable proportions of their lands yielding not more than 7 or 8 bushels of corn, and making no other field crop for market, who yet have continued to live, and some of them to grow richer, upon such returns, and to furnish something of their surplus corn to supply the planters of South Carolina. Now these, and even the best of them, are miserable products, and indicate a wretched and unprofitable condition of agriculture in lower Virginia. But the useful inference which may be drawn from the fact is, that if our cultivators here live, and thrive, by raising corn for sale on such poor lands, it is certain that the planters of South Carolina could do much better by raising corn *for their own consumption*, even on lands which are no better. So great is the difference between a planter's being his own provider of what he is obliged to have and to consume, and being the purchaser of it from abroad, that he could better afford to raise his own corn, than to buy it at a regular discount of 10 cents the bushel below the market price. For there is generally at least that much increase of cost incurred in the charges of transportation and sale—and which, though paid by the consumer, and earned by the merchant, is entirely lost to the producer.

Except in Princess Anne and Norfolk counties, which are the nearest of our mainland to the seashore, there is no part of Virginia so low, and subject to water, as our correspondent supposes, and as is the case in the Charleston district. The lands of those counties require draining, and are therein as much neglected as any in South Carolina. But it is not because of being swampy, so much as the firm lands being almost uniformly level, and therefore, though dry in summer, they are saturated, and often covered, with rain water, during winter and spring. The higher tide-water counties, though having numerous swamps, are mostly of dry land, and the surface enough undulating to prevent too much wetness. Very little has been done to reclaim our swamps; and therefore it is not such land, except to a small extent, but the poor high-lands that furnish corn for exportation, as well as for home consumption. And very low prices serve to compensate corn-raising, for this great region, which furnishes but little else for market. At this time we cannot sell corn for more than $2.25 the barrel (45 cents the bushel)

in the towns, or on tide-water; and to get that price, much corn is carted from the interior 10, 20 or 30 miles over bad roads. We have known corn on York river offered for sale as low as $1 the barrel by the large quantity. These low prices, as well as the low general products, show very poor returns, as well as bad management. But, even if we lose sometimes by low prices, and cultivators perhaps lose always on the poorest lands, still, on a general average of years, products and prices, the cultivators of our corn-producing region are as well rewarded, and as thriving, as others; and on as poor lands in South Carolina, the planters could certainly do better, inasmuch as the corn would there be all consumed where produced, instead of part being sent to be sold at a distant market. It would be very far more profitable, and more necessary, in South Carolina. No agricultural country can afford to buy its bread—and still less at such heavy cost of transportation, compared to the first price, as of Indian corn.

So far our remarks have been made upon the supposition that the corn culture of South Carolina would be on land as poor as that described by our correspondent, or as are the unimproved or exhausted lands of lower Virginia. But there is no need of such unproductive culture being permanently continued, either in Virginia or in South Carolina. The Charleston district especially might be greatly and profitably improved in productiveness, by draining many of the numerous swamps, and higher and firmer lands, which are now greatly injured by excess of wetness. If this were done, even but to a partial extent, (but always properly and judiciously,) the public as well as private benefits would not fail to be very important. And if the calcareous manures of South Carolina were brought into use, (the almost universal neglect of which is so far even more remarkable than the neglect of draining,) the two improvements together would add more value to the agricultural products, general wealth, and general welfare of South Carolina, than millions of dollars could purchase. In short, if we may trust to our very limited information of the existing facts, we are confident that no part of the United States is more susceptible of being benefited by these two modes of improvement than a large portion of South Carolina.

Another matter of the highest importance is embraced in the inquiries above—the effect of drainage in improving health. Of such actual results we know nothing from personal experience—and not much from information as to particular facts. But there can be no question as to the general results. All of the great body of rich low but firm lands in Gloucester county was once a swamp, and the inhabitants were then very sickly. Now, nearly all of that extensive and fertile body of land has been brought under good and careful cultivation, and the low-ground estates of Gloucester are among the most healthy on the tide-waters of lower Virginia. Still, even there, the drainage is far from being the most judicious or effectual—and there yet remain many obvious and fruitful sources of malaria and disease. On the borders of the alluvial flats of James river, above the falls, though a high and hilly country, the inhabitants were formerly very subject to autumnal fevers. The wide low-grounds of the river were then very insufficiently drained and guarded from the effects of inundation. Now, all these lands are well drained, well cultivated, and form one of the most fertile and admirably managed agricultural districts in Virginia; and the river farms are generally quite healthy, and at no time suffer from disease in any degree to be compared with what were formerly the annual and regular visitations.

When we saw the extent and magnificence of the city of Charleston, and saw and heard the evidences of the wealth of its inhabitants, we were the more astonished—nay, we could not have believed the fact, if on less sure testimony—that the whole surrounding country (saving parts of the sea-islands,) was almost an agricultural desert, in which tillage and husbandry were in the lowest state, and where malaria and disease held undisputed sway through nearly all the season best suited for agricultural labors and enjoyments. When it was stated that it was at great hazard of his life for a proprietor to spend even one night on his estate, from June to October, we did not know whether most to wonder that such a pestilential region had not been altogether abandoned—or, not being abandoned, that it had not been more improved, by proprietors who are noted for their general intelligence, wealth, and liberal expenditure. Even if we allow half that we have heard of the disastrous effects of malaria in the Charleston district to be abated for exaggeration, the remainder would make an amount of pecuniary loss, and of physical and mental suffering, which it is astonishing that any people can be content to bear, and that they should not exert every hopeful means for even partial relief.

We are aware that both these great modes of improvement above referred to are not fully available on every plantation, nor even in every considerable district of country. But the advantages of either one would be very great, in regard to the increase of products, and improvement to health. For, in the latter respect, genera

marling, as a safeguard, is next in value to proper and thorough draining.

In answer to the last remark of our correspondent, we have to say that marl is fully as beneficial to cotton as to corn, and most other useful crops. It is more beneficial to clover only because lime is a specific manure for this crop, or an ingredient absolutely necessary to its life and vigor. But it is an unnecessary refinement to weigh nicely the comparative benefits of calcareous manure to different vegetables. Its main and great operation is to make bad soils good, and enable poor land to become fertile. And there is no valuable crop whatever on which this great operation will not be abundantly effective and beneficial.—Ed. F. R.

ON THE PROPER NOMENCLATURE OF GRASSES.

For the Farmers' Register.

Dear sir :—By yesterday's mail, I had the honor of receiving a parcel from you, consisting of the Farmers' Register, vol. 9, No. 2, and several other of your publications, for all of which I beg you to accept my grateful acknowledgments. I perceive that you have transferred to the Register a hasty communication which I sent to Mr. Skinner, respecting the nomenclature of the *grasses* most familiarly known to the agriculturists of this region, and have also accompanied that article with some interesting suggestions, relative to a plan for obtaining a more accurate knowledge of the objects which are daily treated of in our agricultural journals. It is highly gratifying to see that you have taken up the subject in that point of view, as one of the first steps towards a useful discussion is, undoubtedly, to ascertain precisely what we are talking about. It is worse than labor lost to argue the merits, or demerits, of plants, under their *local popular names*, without a reference, at the same time, to the established *scientific names*, by which they may be certainly recognized in all parts of the civilized world; for those popular names are so various, and so often misapplied, that they inevitably lead to error and confusion. Your *projet*, or something similar, is the only mode by which the nomenclature of plants can be extricated from the chaos in which it has been thrown by popular synonymy. My letter to Mr. Skinner was hastily written, on the spur of the occasion, and is of course exceedingly imperfect; its main purpose being to determine the identity of the so-called "*Kentucky blue-grass*." The other grasses, therein mentioned, were merely enumerated as occurring to me at the moment.

I am much pleased to find that you have enlisted my friend, the Rev. Mr. Curtis, in this matter. You could not have found a better hand for the business; and I have no doubt, if your joint suggestions are carried out in the proper spirit, that our agricultural writers may all be speedily enabled to treat *understandingly* of the plants, in which the farmers have an interest. By ascertaining their *scientific names* and giving them always in conjunction with the *popular names*, every intelligent reader will be able to know exactly what is meant, when plants are introduced to notice; and thus a world of conjecture, of error, and confusion, may be obviated. We cannot converse on objects, without *some name* by which to designate them, and distinguish them one from another; and it seems to me, that when names are to be learned, by any one, it is just as easy to acquire one *new* name as another, that a *right* name may be learned just as readily as a *wrong* one. There is even an *economy* of the powers of memory, in having *one definite, universally understood* name, for an object, in the place of *half a dozen* vague, and uncertain ones, although that one may be *latin*, and the others all *vernacular*. It is certainly, I think, as easy, for a mere *English* scholar, to become acquainted with a particular species of grass, under the name of *poa pratensis*, as to ascertain what is meant by the various epithets of "*Kentucky blue-grass*," "*green-sward*" "*spear-grass*," "*meadow-grass*," &c. And when once acquired, the learner has the satisfaction to know, that he can designate the plant by a name which is intelligible, precise, and distinctly comprehended throughout the civilized world.

At all events, I should say, the editors of *agricultural journals*, and their correspondents, would find it greatly to their convenience and advantage, to adopt the universal nomenclature of natural science, when treating of plants. They would then always be accurately understood, and not be playing at cross purposes, in their discussions, by referring to different objects, or bewildering their readers in conjectures, as to what may be the precise things alluded to. As soon as the *scientific names* are acquired, and rendered familiar, the various *local popular names*, could be gradually collected, and annexed to the standard names; and thus a *key* would be furnished to the Babel-like *synonymy*, prevailing in the different districts of our widely extended republic. This laudable purpose, your proposition, as I have said, is well calculated to accomplish; and I heartily wish you every success. With the aid of such a botanist as my esteemed friend, Mr. Curtis, you will find no difficulty in effecting it. If each *agricultural editor* in our country would provide himself with what might be called a "Farmers' Herbarium," containing a *good specimen* of each plant that was immediately interesting to the farmer (whether valuable, or pernicious,) and each species *authentically* labelled with the established *scientific name*, together with all the known *popular synonymes*, he would find himself in possession of one of the most useful dictionaries, or expositors, to which he could resort in the prosecution of his instructive labors. An *herbarium*, such as I have alluded to, being strictly confined to plants in which the farmer is interested, would neither be bulky, nor difficult to obtain. A fair specimen of *each species*, and *variety*, gathered when in its most perfect state of developement, and carefully prepared for preservation, by pressure and drying between sheets of paper, might be procured with but little trouble, I should think, in a single season. If *you* will undertake the work, or get some

active friend to make the collection for you—in the spirit which you have manifested, I will ensure your success. It is only to *begin* and the thing is accomplished. Mr. Curtis will, as he has promised, give any information, as to the mode of proceeding, which may be desired; and when the specimens are ready, send the package to him, and he will affix the *scientific name* to each species, so as to render it *authentic*. They will then serve as standards, for *comparison*, whenever unknown or doubtful plants may be exhibited; or in case the character of any specimen may be disputed.

I fear you will think I have taken a strange unwarrantable liberty, in thus addressing you: But I beg you to understand, that I have done so because I felt a conviction I was communing with a kindred spirit, on a favorite topic; and on this ground I hope my apology will be accepted. I am very respectfully, dear sir, your obedient servant, WM. DARLINGTON.

P. S. My *Flora of Chester county*, contains descriptions of all our *cultivated useful plants*, with brief notices of the properties and uses of the others, as far as known, and their popular names &c. The work may possibly interest you somewhat, though mainly *technical* in character. I will have a copy left for you at my bookseller's, *Kimber and Sharpless, No. 50 North 4th street, Philadelphia.* Will you do me the favor to accept it, and get some friend to call for it, who may be coming to Philadelphia? It will be there, awaiting your order; and I hope you will send for it the first opportunity. W. D.

[So far from deeming the addressing to us the foregoing letter "a strange and unwarrantable liberty," we were much gratified at receiving it, both in regard to its particular object, and also as placing its writer among the direct contributors to the Farmers' Register. We had in the earliest number of the work, as several times since, selected his valuable agricultural articles from other publications; and we trust this commencement of direct contribution from his pen will be followed by as many others as his inclination may suggest, and his leisure permit. The offered present of the 'Flora Cestrica' will be thankfully accepted, and its use and lights permitted to aid some friend and correspondent, who possesses something of the knowledge of botany, of which it is our misfortune (and great defect as an agricultural editor) to be altogether destitute.—ED. F. R.

CRUSHED CORN MEAL—FEEDING HORSES—PRESERVING BACON.

For the Farmers' Register.

Since my former article, in relation to crushed corn meal, was communicated to the Register, I have been informed, by the highly intelligent iron-master, therein alluded to, that he kept his mule teams, of six each, fat last summer, though hard at work every day, on a daily allowance of one bushel of crushed corn meal, and the same quantity of bran, mixed thoroughly together and fed with cut straw—with a moderate quantity of clover hay in the rack. With corn at 37½ cents, and bran at 10 cents a bushel, this mode of feeding would reduce the cost of a six-mule team to *less than thirty cents a day*, or five cents a mule, exclusive of hay and the straw mixed with the meal. A single calculation will show every farmer how much he could gain every year, by adopting this economical mode of feeding his work horses; doubtless enough in a life-time to buy a respectable farm for his sons.

I was also informed by this gentleman, who is one of the best farmers and managers I ever knew, that he fattened twenty bullocks last fall on crushed corn meal, at much less cost than he could have fattened them in any other way. He is decidedly of opinion that he saves more money by crushing and grinding his corn, than by any other economical process practised on his extensive estates; and I know no one in whose sound practical judgment I have greater confidence.

As my sheet is not full, I would add a word on another subject. A respectable neighbor informs me that he has preserved his bacon for twenty years, without the loss of a single piece, by white-washing each joint, on the fleshy side and at the end of the hock early in the spring, before the fly deposites its eggs. He gives the pieces a thick coat of ordinary white-wash, with the common brush, then hangs them up in his smoke-house, where they remain until taken down for use. The white-wash does not impair the flavor of the meat, or injure it in any way, in the slightest degree. PLOUGHBOY.

Rockbridge, Va., March 17, 1841.

WEEDS OF AGRICULTURE.

From Low's Elements of Practical Agriculture.

The weeds of agriculture are those which grow amongst the cultivated plants, and which it is the province of the farmer to destroy. The prevailing plants of this class vary in every country, and in different parts of the same country.

Weeds may be divided into two general classes; those which propagate themselves solely by their seeds, and which, having once flowered, perish; and those which have perennial roots, and flower and bear seeds for successive years. The first are annual or biennial plants, according as they require one or two years to complete the period of their vegetation. The second are perennial plants, and grow again from the roots as well as propagate themselves from their seeds.

In the case of annual or biennial weeds, if the stem is destroyed at the time of flowering, or just before it, the individual is destroyed, and its further means to propagate the species are taken away; but in the case of perennial weeds, the destruction of the stem does not infer the destruction of the plant, because the plant has the power of propagation from the roots. From this distinction, it would seem more easy to destroy annual

than perennial weeds, yet this conclusion does not always hold; for some of the annual species have such numerous minute seeds, that it is often very difficult to extirpate them, and when they have got into ground, keep possession even more inveterately than those which have the power of springing again from their roots.

Of the perennial weeds greatly the most troublesome are those which have creeping roots; for these extend themselves below ground, and if any of the parts of the roots remain, these may give birth to new plants.

Either class of weeds may be frequently destroyed by the same means, namely, by assiduous tillage of the ground; but yet a natural division of them is into such as have annual and biennial roots, and such as have perennial roots.

I. *Annual and biennial weeds.*

Of weeds which have annual or biennial roots, the following are the most prevalent in this country.

1. Sinapis arvensis—wild mustard.
2. Raphanus raphanistrum—wild radish.
3. Papaver rhœas—corn poppy.
4. Centaurea cyanus—corn blue-bottle.
5. Chrysanthemum segetum—corn marigold.
6. Pyrethrum inodorum—corn feverfew.
7. Sonchus oleraceus—sow-thistle.
8. Cnicus lanceolatus—spear plume-thistle.
9. Arctium lappa—burdock.
10. Agrostemma githago—corn cockle.
11. Stellaria media—common chickweed.
12. Spergula arvensis—corn spurrey.
13. Galium aparine—goose-grass.
14. Urtica urens—small nettle.
15. Lamium purpureum—red dead-nettle.
16. Galeopsis tetrahit—common hemp-nettle.
17. Euphorbia helioscopia—sun-spurge.
18. Polygonum convolvulus—climbing buck-wheat.
19. Polygonum aviculare—knot-grass.
20. Ervum hirsutum—hairy tare.
21. Lolium temulentum—bearded darnel.
22. Avena fatua—bearded wild oat.
23. Bromus mollis—soft broom-grass.

1. The wild mustard, the charlock of farmers, frequently springs up in vast abundance in fields of growing corn. It flowers in May or June, and as it ripens and sheds its seeds before harvest, it is difficult to extirpate it. Sometimes its flowers are cut off by a scythe or hook as they rise above the corn in spring; and sometimes they are pulled up from amongst the corn by the hand, which is an unsatisfactory and operose method. The row culture is, in an especial degree, beneficial in the case of this and similar plants, for the first crops of them can be cut down by the hoe in spring. But the period most suitable for destroying the wild mustard is during the summer-fallow and fallow-crops. Yet under any circumstances it is difficult to subdue it, its seeds lying for an indefinite period in the soil until brought by the plough within the influence of the air. Often it springs up without any known cause and covers entire fields. It abounds in fields of turnips, contending for mastery with the young plants. Other species of sinapis also spring up in cultivated ground, but this is the most prevalent and hurtful.

2. The wild radish, or jointed charlock, like the wild mustard, has yellow flowers, and grows and sheds its seeds amongst corn. The two plants, from their similarity, are frequently confounded together, and pass under the common name of charlock.

3. The corn poppy is distinguished in summer by its gay red flowers. It sometimes rises in large quantities in corn-fields, especially in soils that are dry, sandy or gravelly. It receives the name of red poppy, corn-rose, red-weed, &c.

4. The corn blue-bottle is of a genus which contains several species known as weeds. That however which is peculiar to corn-fields is the corn blue-bottle. It grows amongst corn, but rarely in great quantity, and its presence merely indicates careless farming.

5. The corn marigold is of a genus that supplies our gardens and greenhouses with many beautiful flowers. From the color of its flowers it is in some places termed yellow-bottle, in other places gowlands, or yellow gowans. It grows amongst fields of corn, and may be pulled by the hand. It is not in this country a very generally diffused weed, being found only in particular parts. But in some sandy districts of Europe it prevails to so great a degree as to destroy the crops.

6. The corn feverfew or scentless May-weed, is generally classed by farmers under the name of mayweed, with two other plants of similar appearance, stinking chamomile and wild chamomile. The corn feverfew rises sometimes in cultivated land in considerable quantities.

The corn poppy, the corn blue-bottle, the corn marigold, and the different May-weeds may be said to form a class. They grow up with the crops of corn, and announce by their beautiful flowers the return of the warmer season. They are not of the formidable class of weeds, and yet assiduous tillage is required to eradicate them. They are frequently conveyed to the farm with the seeds of corn, and then careful winnowing is the best preventive.

7. The sow-thistle grows in fields of corn. It is of a family of plants whose light seeds are widely dispersed by the winds. But although a common, it is not a dangerous weed.

8. Spear plume-thistle is one of a genus of troublesome weeds, but which are mostly perennial, while the spear plume-thistle is biennial. It sometimes abounds in old pastures. It may in all cases be destroyed by cutting it over when in flower, and before its seeds are ripe.

9. The burdock is a familiar plant whose hooked scales fasten themselves pertinaciously to clothes and the fur of animals. It is a biennial plant, seldom injurious, and easy to be extirpated.

10. The corn cockle or corn campion, is of the pink tribe of plants. The flour of its seeds mixed with grain injures greatly the quality. The seeds are heavy, and on this account cannot be separated from corn in the operation of winnowing. It grows singly, chiefly amongst wheat; and being easily distinguished, it can be pulled up by the hand.

11. Common chickweed is of the same natural family, but of a different habit of growth. It grows not alone, but thickly in the parts of fields

which are enriched by the dung of animals. Under careless management it is often a troublesome weed; and in fields of turnips it will contend for mastery with the young plants.

12. Corn spurrey, likewise of the pink tribe, sometimes grows thickly in corn-fields, and then it indicates bad condition of the soil, or careless farming.

13. Goose-grass, called also cleavers, catchweed, and goose-tongue, grows naturally in hedges, but is carried also to the cultivated fields where it propagates itself rapidly. Its seeds are furnished with hooked bristles, which attach themselves to the fur of animals, and in this manner are disseminated. In some parts of England it is a troublesome weed, but in other parts it is comparatively inoffensive.

14. The small nettle is an annual plant. It sometimes extends over cultivated fields, and generally indicates that the soil is enriched by putrescent substances.

15. The red dead-nettle, though termed a nettle, is of the mint tribe of plants. It is thus of the same family as the mint, the marjoram, the sage, and the thyme, plants all harmless and possessing cordial and stomachic properties. The red dead-nettle is sometimes frequent in fields, especially near hedges, and in sheltered places.

16. The common hemp-nettle, also of the mint tribe of plants, is common in corn-fields. Reapers are sometimes affected by severe inflammation in the hand by grasping it. It is covered by bristles, and these, on being pressed, emit a poisonous fluid.

17. Sun-Spurge is one of a family of plants which yield a peculiar milky juice. It is sometimes abundant in corn and turnip fields.

18. Climbing buckwheat is, in some places, termed bind-weed or bearbind. When in quantity it is apt to overpower the corn. It is frequently seen twining round turnips and other plants. Its seeds are said to injure wheat; but the seeds are in themselves nutritive, and if mixed with oats will not injure their quality.

19. Knot-grass is another of the buckwheat genus, of frequent occurrence; but it abounds more in waste places than in cultivated grounds.

20. Hairy tare is a leguminous plant which frequently occurs in cultivated fields, and then it is a hurtful weed.

Several of the annual grasses are of frequent occurrence in cultivated grounds.

21. The bearded darnel is common in some countries, but it is comparatively rare in this. It has been condemned as a poisonous plant for more than 2,000 years.*

22. The bearded wild oat is often a very pernicious weed. Its seeds readily drop out when ripe; and as it ripens sooner than the cereal grasses and then sheds its seeds, it is difficult to extirpate it. It is frequently conveyed with the seed-corn to the ground, and thus may be propagated on the best managed farms.

23. Several of the broom-grasses are found as weeds in our corn-fields. The most frequent of these is the soft broom-grass, in some places termed goose-grass. The seeds of this plant are like those of rye-grass, and are propagated along with that grass. But the plant itself is easily distinguished from the rye-grass; and when the latter is to be thrashed for seeds, the broom-grass may be picked out by the hand. The list of this class of weeds might be greatly extended, but this does not seem to be here necessary. They are all of them best extirpated by dilligent tillage. The better cultivated a country becomes, the less prevalent and hurtful will be this class of plants.

* This is the "spelt" of lower Virginia, which has not been very long introduced, and which yet is believed by most persons to be degenerated wheat, as they also believe of "cheat."—Ed. F. R.

II. *Perennial Weeds.*

1. Ranunculus acris—upright meadow crowfoot, and other ranunculi.
2. Senecio Jacobea—common ragwort.
3. Tussilago Farfara—coltsfoot.
4. Bellis perennis—daisy.
5. Chrysanthemum Leucanthemum—great white ox-eye.
6. Cnicus arvensis—corn or way-thistle.
7. Centaurea nigra—black napweed.
8. Sonchus arvensis—corn sow-thistle.
9. Lamium album—white dead-nettle.
10. Rumex obtusifolius—broad-leaved dock.
11. Polygonum amphibium—amphibious persicaria.
12. Urtica dioica—great nettle.
13. Agrostis alba—marsh bent-grass.
14. Arthenatherum avenaceum—common oat-like grass.
15. Holcus mollis—creeping soft grass.
16. Triticum repens—common wheat grass.
17. Juncus effusus—soft rush and other junci.
18. Ericeæ—heaths and other shrubby plants.
19. Filices--ferns
20. Musci—mosses.

1. The upright meadow crowfoot grows in a great variety of soils and situations. Like most of the dangerous family to which it belongs, it inflames and blisters the skin. It is too acrid to be eaten by cattle, unless largely mixed with other plants; but so mixed, it is consumed in small quantity, and from its abounding in our meadows, is perhaps designed to serve as a condiment. In common with some others of the genus, it is termed butter-cup or butter-flower, from a popular notion that it gives the yellow color to butter. It however injures the butter, whose yellow color is due to the richness of the pastures and not to these acrimonious plants.

The creeping crowfoot, *Ranunculus repens*, and bulbous crowfoot, *Ranunculus bulbosus*, resemble the last in their properties. They adorn our meadows with their bright yellow flowers, and are comprehended under the common name of butter-flower, butter cup, and sometimes of king's-cup, golden-flowers, &c. The breaking up of grass land for a course of tillage is the only means of eradicating this class of weeds.

2. Common ragwort is a large, well known weed in pasture fields. It receives many names, as ragwort, ragweed, canker weed, &c. It has a perennial root, and grows to the height of two or three feet. It is best kept down by pasturing with sheep, which eat it in its early stages. By being pulled up by the hand, which can be easily done when the ground is soft from rain, it can be extirpated in grass fields without taking up the land for a course of tillage.

3. Coltsfoot grows chiefly in moist clays, and especially in marly soils. Its broad leaves overspreading the surface, it is very hurtful where it prevails. Tillage and draining, and improving the texture and fertility of the soil, are the means to be adopted for rooting it out.

4. The daisy, though every where loved and admired as the harbinger of summer, and the ornament of our fields, is, in the judgment of the farmer, a weed. Where it prevails too greatly, the land requires to be renovated by a course of good tillage, and by lime.

5. The great white ox-eyes, sometimes also called the great white daisy or moon-flower, often abounds in pastures, and is only to be extirpated by tillage.

6. Thistles form a class of weeds very formidable to the agriculturist, from the ease with which they are disseminated by means of their downy seeds, and the difficulty of eradicating them. Some of them have deep vivacious roots, and all of them, on account of their vigorous growth and their strong spreading leaves, are injurious amongst the cultivated plants.

The most common of the thistle kind is the corn or way-thistle. This plant has strong, creeping, and vivacious roots, the habit of which is to strike down to a great depth in the ground. If any parts of these roots are left in the soil, they will again give birth to numerous plants.

The means of extirpating the way-thistle from land is by a continued tillage and deep ploughing. Even an efficient year's summer fallow will not always effect this; when land has been thoroughly overrun by the plants, they will spring up in future years, and require successive years' tillage thoroughly to exterminate them. The lands of various parts of this country used to be greatly more covered with thistles than they now are. In some parts of Scotland they were once so abundant that they used to be cut regularly for five or six weeks in summer to supply food for the wretched cattle of the day. In well cultivated districts they have been got under, though, so great is their tenacity of life and power of propagating, that they demand constant attention on the best cultivated farms, and under negligent management never fail to take possession of the soil. New lands brought into cultivation are often entirely covered with this species, and a course of tillage is necessary before it can be subdued. In the ordinary management of a farm, thistles will sometimes spring up in great abundance with the first crop of oats after grass. In this case, they must be weeded early in summer, by being cut over near the surface, which is conveniently done by the weed-hook. The sole effect of this, however, is to retard the growth of the plant and prevent it from running to seed, or contending for mastery with the growing corn.

Thistles sometimes spring up in great plenty in old pasture fields. In this case, they should be cut close to the ground at least once a year, so as to prevent their smothering the pasture plants and running to seed. But it is only when the land is broken up for tillage that effectual means can be used for destroying them. Instruments, indeed, have been devised for pulling up thistles from the ground, but the roots of the plant are too easily broken, and the smallest portion left in the soil will spring again.

The thistle not only grows from its creeping, vivacious roots, but is widely disseminated by its light downy seeds. Thistles therefore ought to be cut down before being permitted to perfect their seeds; and they should never be suffered to grow in waste places and hedges, whence their light seeds may be carried to poison the neighboring fields. Further, when they have been cut down at an advanced stage, they should not be left on the ground, for like many compositæ they will mature their seeds though separated from the ground.

7. Black knappweed is one of a class of thistle-like plants. It is termed horse-knot, and receives many other local names. It is a hurtful weed in pastures where it prevails, increasing much by the roots, and being extirpated with difficulty.

8. The corn sow-thistle is a frequent plant in corn-fields, distinguished by its tall stems and large yellow flowers; but it is not usually a very hurtful weed.

9. The white dead-nettle is occasionally common in corn-fields. Having a strong, creeping perennial root, it should be carefully extirpated. This is one of the mint tribe of plants before referred to.

10. The dock genus comprehends a variety of species known to the farmer as weeds. These plants produce a large quantity of seeds, which they readily mature. The seeds are heavy, and though diffused by the smaller birds, to which they serve as food, they are not so readily disseminated by the winds as those of the thistle kind. They, however, vegetate freely when they fall on the ground, and produce plants which, when once allowed to extend their roots in the soil, it becomes difficult to exterminate. The roots are vivacious, and if cut into pieces the separate parts will send forth shoots. It is more easy however to raise up the roots of docks than of thistles by means of instruments, which receive the lower part of the stem in a cleft, and being used as a lever, wrench the plant from the ground. But the only effectual method of extirpating docks, as of most other weeds, is by summer fallow or cleaning crops. The seeds of docks are often conveyed to the farm mixed with grass seeds. When this takes place, the docks will frequently establish themselves with the grasses and grow vigorously the second year. They should be then pulled up by the hand, so as to prevent their running to seed and further overspreading the ground. The species of docks are very numerous. The most common is the broad-leaved dock, which is found in every country of Europe. In this country it generally indicates a good soil.

11. Amphibious persicaria is of the same natural family as the docks. On damp deep soil it is sometimes very abundant, overspreading the surface when the land has been left in grass. The prevalence of this plant generally indicates the need of draining.

12. The great nettle is frequent in waste places, under walls and in hedge banks. This species grows over all Europe, and is found from Barbary to Siberia and Japan. In this country it generally indicates a good soil. When it takes root in pastures, it is very difficult to extirpate it. It forms patches on which other plants will not

grow. It may sometimes be destroyed by cutting the plant so as to enfeeble it, and sometimes it is dug up by the roots. But when it prevails in pasture grounds to any extent, the proper remedy is a course of tillage.

Several of the grasses are known as weeds, which, from their creeping or vivacious roots, it is difficult to extirpate.

13. The marsh bent-grass extends itself not only by its creeping roots below the surface, but by its stolons or suckers above ground. Others of the genus extend themselves in the same manner in wet situations. They receive the names of black couch, black twitch, or black wrack.

14. The common oat-like grass has bulbous roots, whence it is called by farmers knot-grass. It is a very troublesome weed in many soils. The little bulbs when detached from the root, grow again, so that very careful tillage is required to extirpate the plant when it takes possession of a piece of ground.

15. Creeping soft-grass is another plant which when it takes possession of ground is not easily rooted out. It has a strong creeping root; but the species is comparatively rare.*

16. Common wheat-grass or couch-grass, is called likewise quick or wrack, and receives many other names. It is the most abundant of the perennial weeds of corn lands. Its roots are creeping, and every part of them left in the ground will grow; and hence the difficulty of extirpating the plant. The most effectual means of doing so, is by frequent ploughing and harrowing, and collecting the roots by the hand. This constitutes, as was formerly seen, an important part of the process of the summer fallow and preparatory cleaning crops. There is no weed which requires so constant a vigilance on the part of the husbandman as the creeping wheat-grass; but it is well that in contending with this perpetual enemy he is compelled to give a more assiduous tillage to his land than he might otherwise be induced to do.

These different grasses are frequently all confounded under the name of couch, quick, and wrack,—names sufficiently indicating their characters.

17. The soft rush, with other junci, are all to be regarded as weeds when they prevail amongst the better plants. They indicate wetness, and are only to be effectually removed by draining.

18. The heaths are a widely extended family, covering a large part of the north of Europe. Where they intrude amongst the cultivated plants they are to be regarded as weeds.

Many other shrubby plants are found in unimproved land, and one of the first objects of cultivation is to extirpate them. Fallowing and liming are the usual means by which this class of plants is destroyed.

The whin is one of the class of shrubby weeds. It requires continued culture thoroughly to extirpate it; for, after being apparently subdued, it will spring up again in great numbers, and for successive years. When the land is in grass, the young shoots may be sometimes pulled up by the hand, after the land has been saturated by rain. But when whins have thoroughly established themselves in the soil, and extended their roots, they must frequently be hoed up before the plough can act. The land being then ploughed with a good furrow, the remaining roots are torn up, and the plants at length destroyed. On elevated sheep farms, whins should be encouraged rather than destroyed, for in such situations they afford shelter and food.

Broom is a shrubby plant, for the most part more easily extirpated than the whin, though in certain situations it grows with great pertinacity. It affects the lighter soils.

Brambles and other shrubs of the rose family are often the possessors of unimproved soils. Certain species of the bramble are very tenacious of their situation. These plants are destroyed by the same means as the whin; and the like remark applies to all the large shrubs.

19. Another class of weeds is the acotyledonous, or flowerless plants, at the head of which stands the fern. Of the fern or fern-like plants, there are many species in this country. They grow chiefly in mountainous tracts of natural pasture.

20. The last in order of the weeds are the mosses. These plants are altogether innutritious. They often intrude extensively on pasture ground, and supplant the herbage plants. The best remedy in all cases is a course of tillage, and the application of lime.

The list of perennial weeds might be greatly extended. They differ in their characters and habits of growth, but they are all of them eradicated by careful tillage, chiefly during the period of the summer fallow and cleaning crops.

* Called wire-grass in lower Virginia.—Ed. F. R.

ON BURNING COTTON STALKS, TO DESTROY INSECTS.

From the Farmers' Gazette.

A neighbor of mine was induced by an article headed "Burn your cotton stalks," which has been published in several papers, to make an examination of his cotton stalks, which has resulted in his conviction that the suggestion of "A young Planter," is worthy the consideration of his brethren of the plough. This gentleman states to me that a number of his cotton stalks perished last summer, in different stages of their progress to maturity—some of them with a partial crop of bowls upon them. In making the inspection alluded to, he discovered that some of the limbs were perforated underneath, near their junction with the main stem. In some of these cavities, he found a small straw colored bug of an oblong form, between the size of a grain of wheat and a small pea, while from others the little intruder had disappeared. I here inquired of him if it was not probable that these intruders had commenced their exploring expeditions after the stalks were killed by frost, to which he replied, that he noticed several apertures which were partially closed by the after growth of the plants. From these facts, he is persuaded that much evil for the present season might have been averted by a timely destruction of his cotton stalks.

If any light can be shed upon this subject it is desirable that it be reflected through your columns. The subjects of rot and rust, after all the speculations that have appeared in reference to their origin, still remain among the "terra incognita"

of agricultural ken. The best method of averting them, if possible, is a subject of great interest to the planter. CORN STALKS.

FLORIDA.

The National Intelligencer, of a recent date, publishes a correspondence between Judge Brackenridge, of the late House of Representatives, and Col. Wyatt, of Florida, in which the latter, in answer to various inquiries, gives some interesting particulars relative to the natural advantages of the Florida country.

That portion of the territory known as the Everglades extends from the head of St. John's river to within ten or fifteen miles of Cape Florida, thus running almost the whole length of the territory from north to south. This extensive tract is believed to be twenty or thirty feet above the level of tide-water, and is susceptible of being rendered perfectly dry by means of deepening and widening the various outlets or rivers that flow through it from the lakes to the sea. The lakes near the centre of the Everglades are deep and navigable, and connect with one another throughout the whole distance. Col. Wyatt states that he ascended two of them and found them about the same in point of elevation. The current on approaching the lakes was very rapid; this was at a dry time when the glades were not overflowed by waters from the lakes. "These facts," says he, "convinced me that if the heads of these outlets or rivers were opened, by deepening and widening them, which could be done at comparatively small expense, these lakes could be kept at all times within their natural bounds; which would render the glades perfectly dry, opening to cultivation an extensive plain of table lands of about eight thousand square miles, (after deducting a fourth for the lakes) sufficiently elevated above both lakes and tides to be certainly free from inundations, and as healthy as the Keys."

The tropical region of the peninsula reaches from Cape Florida about 200 miles north; the soil of the Everglades is said to be very rich, with a deep black, alluvial formation; it is covered with water only in the wet season.

Concerning the productions of this territory, in addition to the ordinary tropical fruits which may be cultivated in abundance, Col. Wyatt says:—

The nopal, or prickly pear, on which the cochineal insect is found, is a native of Cape Florida, so is the cotton plant or tree; both grow wild in the forest, and the cotton tree is the same as cultivated on our plantations, differing only in the smallness of the leaf and pod, and the length and fineness of the fibres. The seeds are turfed, like our upland cotton, and need not be planted more than once in some three or four years. The Manilla hemp is also a native growth of this region. In fact, it is to be found in all parts of the territory, and can, no doubt, be cultivated with great advantage as far north as the 31st degree of north latitude on the poorest sandy land. The Indians have ropes, mats, &c. and, before the war, supplied the first settlers with a variety of articles formed out of it, such as halters, lines, bedcords, &c. at a very cheap rate. It was commonly known as the grass-rope. Sugar, of course, can be cultivated with the same success as in the Island of Cuba.

I doubt whether coffee can be cultivated with advantage here, as it will not thrive well on soil based upon rock approaching near the surface, as is the case in this region. The coffee tree has a long tap root, which penetrates the earth to a considerable depth, and cannot be sustained, as almost all other trees and plants are, by lateral roots. The vanilla plant, which is used to a very great extent in imparting the fine flavor which they have to Spanish cigars, snuff, &c. is found in a wild state in all parts of South Florida, in great abundance.

The arrow, or coonti root, also abounds on Cape Florida; on which the Indians, and even the white settlers in that region, prior to the war, subsisted almost exclusively. It is an excellent substitute for bread, and the process of converting it into the most beautiful and snow-white flour is very simple, requiring nothing more than a common tin grater, and a bucket or tub to wash it in, for the purpose of separating the flour.

As for the production of tobacco of a superior quality in this region of Florida, as well as in portions further north, there can be no question. Indeed, the experiment has been already fully made, and has resulted in the raising of an article not inferior to that in the West Indies. Its flavor is thought by many to be superior to that of the Cuba.

The facilities for internal communication in Florida are very great, and it is believed that at small expense an inland steam navigation can be opened directly through the centre of the Peninsula. If the capabilities of this tropical region, which are described as so great, can be brought into use, the importance of the Florida country to the union can hardly be appreciated too highly. We shall stand, as a nation, still more firmly on the independent basis of domestic resources when it is found that the productions of the tropics, now brought to us from abroad, may be added to the list of native commodities in quantities sufficient to supply our wants.—*American.*

WIRE-GRASS DESTROYED BY HOGS.

We have many native perennial grasses amongst us which I am convinced are worthy of cultivation, and shall experiment upon some of them this year; and should like to hear of many others entering upon the research. And now, before I fill up my sheet, let me give some facts with observations upon the despised *Wire* or *Joint Grass*, (so called in my section.) That the prejudices of the reader may not cause him to reject the merits of this grass, I will assure him how it can be destroyed where not wanted to grow, without any loss of labor.

Like many other grasses, it is so multinamed, it is not easily known by name. Its botanical name even seems doubtful. While a celebrated botanist, Dr. Darlington of Pennsylvania, calls it poa compressa, the Editor of the Farmers' Register contends that its true name is *triticum repens*. It is known in England by the name of the *couch-grass*, in Pennsylvania *blue-grass*, Virginia *wire-grass*, and some parts of South

Carolina, *wire-grass*, and others *joint-grass*. It is however easily known by description. It is a perennial, growing from the root or joint as well as seed, the stem or vine however, above ground, is killed by the freezes every winter. It branches out from the central root two or three-feet in the summer, and hugs the earth with roots from every joint, which are not over 2 or 3 inches apart. And now for the facts, as relates to its value and plan of destruction. It had so taken possession of some bottom land which I cultivated, that I concluded it was vain to attempt to make cotton longer upon it. Knowing that hogs were fond of it, I concluded to fasten the hogs up in the field without any other food, to see if they could live upon it, and in some degree destroy it, or at least thin it, so as to render the land fit for cultivation. The hogs were put in, in Feb. 1840, when very poor. Result, in 4 weeks: they were in order, fit for pork, and had rooted the field where the grass grew, like a potato patch where hogs had run. In 1839, part of this field was planted in corn and the other part in cotton. That which was in corn I manured in the hill, planted early, and planted thick with peas the first ploughing. The corn was rank and the peas nearly covered the ground, so as, with the corn, to exclude the sun pretty well from the grass. I observed where the grass was shaded, that its vines, instead of hugging the earth, run up perpendicularly, and most of it so perished, that it either died or brought no seed. Since then, I have noticed where corn, peas and pumpkins have been planted three years in succession, where this grass grew, it is pretty well extirpated. I have further observed that it perishes wherever the ground is completely shaded by trees or weeds. This year I have 50 or 60 hogs fastened up in the same field, since my peas were eaten off. They have not been fed with one bushel of grain, or other food but what they gather in the field, now about eight weeks. Although the grass was much thinned out last year, so as not to injure the corn or cotton crop upon it, my hogs look as fat as I ever saw hogs upon peas or potatoes. If any doubt it, come and see. Be it remembered that it is the stalk or vine which is covered by the plough, and not the top or fibrous roots, that is eaten by hogs! the stalk being covered, it becomes pulpy and saccharine; if exposed to frosts, it dies. J. D.

AN ACT TO PROMOTE AGRICULTURE IN NEW YORK.

From the Journal of Commerce.

This act became a law on the 5th inst. It appropriates $8000 per annum, for the term of five years, for the promotion of agriculture and household manufactures in this state. The sum of $650, for New York county, is given to the American Institute.

When the New York State Agricultural Society, or any county agricultural society which is now, or may hereafter be formed, or the American Institute, shall by voluntary subscription raise any sum of money, then the comptroller, on an affidavit of the facts, shall draw his warrant on the treasurer for an equal sum, which is not, however, to exceed the amount apportioned to the county.

It is the duty of the officers of the state and county societies to regulate and award premiums on such articles as are best calculated to promote the agricultural and household manufacturing interests of the state, giving the reward for the most economical or profitable mode of competition. An accurate written description of the whole process in raising the crop, or feeding the animal, as may be, is to be given by the person claiming the reward.

EXPERIMENT ON THE PROPER DISTANCES FOR COTTON.

From the Southern Agriculturist.

Mr. Editor:—When I had the pleasure of seeing you at my house last spring, you requested me to make an experiment on thinning cotton to different distances, with the view of ascertaining, if possible, what is the best distance to give between the hills. I made the experiment accordingly, and hand you an account of it.

The rows were three feet apart, and five hundred and eighty-five yards long.

		Inches	Produced
1st	row thinned	to 6	100 lbs. seed cotton.
2d	" "	to 8	90 " " "
3d	" "	to 10	106 " " "
4th	" "	to 12	82 " " "
5th	" "	to 14	92 " " "
6th	" "	to 16	100 " " "
7th	" "	to 18	107 " " "
8th	" "	to 20	105 " " "
9th	" "	to 22	118 " " "
10th	" "	to 24	91 " " "
11th	" "	to 7	122 " " "

The difference in the product of the different rows, I suspect, is owing to the manure not having been equally distributed, for it is difficult to get precisely the same quantity put under each bed. If any thing is proven by this experiment, it is, that between six inches and twenty-four, there is but little difference in the product; but the same experiment must be repeated for several years before the question, whether one distance is better than another, can be settled. Last year was very wet, and the weeds grew unusually large; this may account for the rows having the greatest distance producing as much as the others; but in a dry year the result might be very different. To make a satisfactory experiment, I would suggest that it be made upon cotton to which no manure is applied, on account of the difficulty of spreading the manure equally on the different rows.

J. A. GILLESPIE.

Marlboro', So. Ca.

P. S.—The land on which this experiment was made is upland, sometimes called oak and hickory land.

ROHAN POTATOES.

To the Editor of the Farmers' Register.

As my experience in cultivating the Rohan potato does not agree exactly with that of your correspondent, as stated in the last number of the

Register, p. 262, I have concluded to furnish you a few remarks relating to my experience, hoping that many others, who have cultivated the same potato, will follow the example. Such seems to me the only mode by which we can in any short period ascertain the real value of this species of potato for the table. If I remember correctly, the accounts heretofore published represent the Rohan as an inferior potato for the table, and less farinaceous than some other kinds. Such has been my experience in a trial of them for three years. Let it not be understood that I have used them three years for the table. Three successive years I have cultivated them, and have each year tried them, by roasting and boiling. I have never found them mealy, to use a common phrase, but more like the common *yellow* potato, so generally brought here from the north in the spring, and, strange to say, generally planted. This species, the yellow, is barely edible when young, but when ripe is only fit for stock. The flavor of the Rohan is certainly superior to the yellow potato; but the real Mercer, the Forty-fold, the white kind from Eastport, Maine, and the potatoes procured yearly by Mr. N. of our town from the Quakers on North River, are, to my taste, far preferable to the Rohan for the table. They are much more farinaceous than the Rohans raised on my farm, on a soil tolerably stiff, and called commonly "mulatto soil." But it would seem, from the description given in your last number, by the correspondent referred to, that his soil is peculiarly adapted to the cultivation of the Rohans. Perhaps the experience of many others may agree with his, and, if so, it will doubtless be of great importance to the state. The most of the potatoes brought here from the north, for a year or two past, if not longer, except those specially ordered, have been of miserable kinds, fit only for stock. Those who have relied on the miscellaneous importations here from the north, to supply their tables the last winter, have fared badly indeed.

It is a matter about which I presume there can be no doubt, that some species of potatoes are much better for the table during some seasons of the year than at other seasons. I have found the Forty-fold potatoes earlier and superior to all other kinds for summer use. They are very white, and are farinaceous, even when quite small. They are not so good in winter. The real Mercer potato is excellent in fall and winter. I speak from my own experience, and from observations made within thirty miles of town, in saying that the Mercer potato can be raised here in perfection. I mean by this term, as good as we ever get from any part of the country. There are two or three varieties of what are *called* Mercer potatoes. The kind perfectly white is, I think, the preferable kind. They are raised in great perfection on the Eppington plantation in Chesterfield, and the seed potatoes have not been changed, as the owner says, for ten years. In September last, the Mercer potatoes raised on that plantation were equal to any potatoes of American or European growth, that I have seen for ten years. The above circumstances are mentioned to show what can be done here in relation to this important crop, and to stimulate, if possible, our farmers near town to do, what can easily be done, and what it would seem their interest to do—to raise potatoes of a superior quality, sufficient to supply the towns in the state; as well as their own families.

The Rohan is certainly a very productive potato, and is equalled by none other known to us, unless it be the Forty-fold. Judging from appearances while digging, without weighing or measuring, I have thought the Forty-fold equally productive with the Rohan. But it is probable appearances deceived me. I rejoice that your correspondent has called the attention of the farming interest to the importance of the potato crop. Surely the buyers will encourage the home producers, when they know, as they must know, that the importations here from the north are generally of the very worst kinds; and when those who have had experience know that the potatoes imported here from Europe, the present and a few winters past, have not been superior, if equal to, the Mercers raised in the neighborhood. S.

Petersburg, May 10, 1841.

"THE BARREN SANDS OF JERSEY."

From the Farmers' Cabinet.

Sir,—I have been much interested with Mr. Gowen's communication relative to the culture of his farm of 40 acres, and its products; such an instance of devoted and untiring industry is deserving the highest commendations. To those who are acquainted with the nature of the soil which he cultivates, his success must be surprising; for who could contemplate the possibility of raising such magnificent crops of roots—beets, carrots and parsnips—on a soil which, only five years ago, was impenetrable to an iron bar, at a depth of three or four inches from the surface? But so it is; and truly has it been said, "To do much, we must have much to do"—witness also the agriculture of the eastern states, where the most perfect systems have been adopted, amidst the greatest disadvantages of soil and climate, and the triumph of *mind over matter* has received a most decided illustration. I say, I have been highly interested with Mr. Gowen's statements, and rejoice in the instance which it furnishes of the truth of your motto—"The productions of the earth will always be in proportion to the culture bestowed upon it."

But there is a portion of our country, lying at present under the ban of sterility, which would not, in such hands, be found a whit behind the most favored in point of productiveness; at the same time, it enjoys a facility for improvements which no other country, perhaps, possesses—I mean New Jersey, that country which is every where spoken against, and whose *barren sands* have passed into a proverb and a by-word. During a day which I lately spent there, in company with *the Cooper family*, I had come to the conviction, that there is no part of the United States which offers a fairer field to the view of the agriculturist than New Jersey; its perfectly inexhaustible beds of marl, crossing, as they do, so great a portion of the state, offering such facilities for improvement as are quite incalculable, and its mild and dry climate and proximity to the best markets, rendering it the most desirable of all situations for the agriculturist and horticulturist, particularly for the cultivation of flowers, the soil

having been ascertained to be peculiarly adapted for their perfect blooming—the dahlias especially.

Various have been the estimates of the importance of marl in the improvement of the Jersey soil, but they have all fallen far below the actual results. In my late visit I became acquainted with some instances, showing the most astonishing products that have been reaped from the use of it and improved tillage, and, with your permission, I will mention one or two, which are, however, by no means solitary cases.

Mr. John Gill cultivates a farm of 30 acres in Haddonfield: a portion of the land is situated on a hill-side, and is, therefore, not so highly improved, but upon these 30 acres he kept the last year such a number of cattle, and grew such quantities of produce, as were quite astonishing to every one. Would he give a statement for the pages of the Cabinet?

Capt. James Cooper said, "In the year 1793 I travelled eight miles before I could find a farmer who had it in his power to supply me with a single ton of hay; on going over the same road at this time, I could purchase more than two thousand tons; many of the farmers cutting upwards of a hundred loads yearly. My friend, S. R., whose farm, a few years ago, yielded nothing but blackberries, and was one uncultivated waste, produces the finest crops of wheat, and other grain and corn, and yielded more than 100 loads of hay the last year, at a cut of two tons and a half per acre, and all this is owing to the marl!"

We visited Todd's pit, which is by many supposed to contain the finest marl in New Jersey; the supply appears almost inexhaustible, occurring in an unbroken bed of the purest quality, from 8 to 10 feet thick. The owner, Mr. Alexander Cooper, disposes of it by the rod square to persons who dig it themselves; and at this price he is realizing about 1500 dollars per acre for the marl, the land afterwards being more valuable than before. This gentleman feeds his stock with corn and cob-meal, and no where have I seen finer animals, or in better condition.

YOUR SUBSCRIBER.

REELING SILK IN TENNESSEE.

From the Silk Journal.

[If the following letters, from the Rev. Mr. Ross, do not convince every reader of the practicability of the silk culture in this country, we know not what will. Those who doubt as to the *reeling* process may find a good lesson here.—*Ed. S. J.*]

Kingsport, (East Ten.) Feb. 22, 1841.

Gideon B. Smith, esq.:—Dear sir,—I never felt so sanguine of the silk culture as at this moment. There is nothing now in the way of its immediate advancement in East Tennessee, unless it may be that slowness which seems inherent in the motion of a farming people to change their habits. I say there is nothing *now* in the way—because, since I recommenced reeling on the first day of this month, my success is such, that I intend to advertise to buy from 1 to 2,000 bushels of cocoons.

The great bugbear has been the reeling. That question, as to *quality*, I considered settled by my experiments last summer, although at a costly trial. Since I have recommenced reeling, I deem the question of *quantity* disposed of for ever. Presuming I should not be able to obtain cocoons for more than two reels, until the summer, I began with that number on the first day of February. My cocoons were very indifferent, with few exceptions, some not yielding more than 8 oz. to the bushel—none exceeding 14 oz. Part of the time the weather has been very severe, filling my room with condensed steam; nevertheless, I reeled, and two hours after dark. Thus showing, what was not believed, that reeling can be done after night. Under these circumstances my average has been between 9 and 10 oz. for each reel per day. This reeling is better than the best average I saw on the books of the Model Filature in Philadelphia last summer. The best average I saw there, in three weeks' work, was 10½ oz., in long summer days too, and having some, if not many, first rate cocoons—none of which I have. And I saw no cocoons there so bad as many of mine. I think I will show 1 lb. per day to each reel, even with such cocoons as I have, before the 1st of March. I have reached 14½ oz. Now, my dear sir, do you not say I have some reason to be pleased. Many thanks to you for your encouragement to perseverance. The cost of my reeling is 2 shillings per day to each spinner, who finds herself. The flossing and turning the reel may be, *together*, 1 shilling more, if hired, or *nothing*, if little servants are employed. Before the 1st of March, I will show, that without counting interest on fixtures, &c., which will be a thing of nothing, I can exhibit beautifully reeled silk, which cost me 2 shillings per pound for reeling.

In a short time I think I shall have a very convenient filature, and silk reels enough, if I am sure of cocoons, to turn off sufficient silk to redeem the bold promise I made you last spring. I am making improvements in the saving of time, &c. every day. The double strainer to each pan I find works well. FREDERICK A. ROSS.

[We must apologize to our friend, Mr. Ross, for the publication of both the preceding and following letter. They were not intended for publication, but they will do more public good than private harm.]

Rotherwood, April 6, 1841.

Gideon B. Smith, esq.:—Dear sir,—Your esteemed favor, of the 21st March, is to hand. Mr. Lynn, I presume, called on you, returning from Philadelphia. We think exactly alike on the subject of our national independence. And I have always, before there was any personal interest, been a tariff man; my silk enthusiasm has hardly abated at any time in six years. It is now higher than ever. I delivered a lecture the other day twenty miles from home in a court-house, and exhibited the model of a feeding and spinning frame, which I carried in my saddle-bags. I enclose you an advertisement which I am spreading through this county, and you will see from it that the business is no child's play with me. It is no longer experiment. I want nothing but the certainty of sufficient cocoons to secure the fact of immediately converting multicaulis leaves into gold. The victory is won. The people have nothing to do but to secure it. Cocoons can be made in this country for $1,25, and, when labor is not hired, thousands will say, as a man said to my inquiry, 'what it cost to make

the five bushels he sold me.' 'Cost?' said he. 'Yes,' said I, 'what did the production of these cocoons cost you?' 'O!' said he, with surprise at my question, 'they cost *nothing*, sir, my little brothers and sisters made them, and their labor would have been nothing otherwise.' If $20 had fallen from the clouds into that man's hand, he would not have had a clearer gain to his income without additional expense. Thousands will answer in this spirit, ere long, I believe.

My two reels are steadily at work. The silk reeled since 1st February amounts to about 70 lbs. Some of it is as good as they can reel in Piedmont, to save their lives, (as the boys say,) and the worst, many times better than any I have seen from Smyrna, or Bombay. Up to last Saturday, two girls in 52 days, all sorts of weather and cocoons, had reeled 62 lbs. of silk, without their being pushed at all, and idling some of course. They are singing half their time—I hear them now—and are delighted with their work. The profit I am making at present, is greater than I expected it to be. I could make more money at reeling silk, than any cotton plantation, or sugar, or gold mine in the United States. The girls in 52 days have reeled 62 lbs. of silk. The cocoons cost me $186 00

The 2 girls wages, at 2 shillings each per day,	36 33⅓
Two reelers, at 1 shilling for the two per day, (two children who turn the aspel,)	8 66⅔
Flossing cocoons, at 12½ cts. to the 1 lb. of silk,	7 75
	238 75
Price of 62 lbs. of silk, at $5,50,	341 00
Profit,	102 25

From which must be deducted interest on fixtures, expense of coal, water, &c. After all of which is taken off, some of which would be only nominal, there is left a greater profit than I could expect or desire on a large business. In my advertisement, you perceive I offer, conditionally, 20 per cent. more than the price now given, which, with the deduction on the cotton yarn (to the farmers as money) from the retail price, will overgo $4, on a bushel, making a pound of silk. It may be less on the inferior cocoons per ounce. I shall probably pay the equivalent to $4, per 16 oz., without regard to my condition, since I have read your letter.

I am fitting up my cocoonery to feed with the branches, on the principle of Mr. Morris, of Burlington, modified. I dispense with his spinning frame as he has it horizontal above each feeding frame, and have it perpendicular between the two shelves, which form one row. I have no apron or shelf to catch the litter, that may riddle through to the ground.

We talked about this, and you thought there was no need of any thing to catch the litter. The whole affair is very cheap, and I intend to give it a fair trial; my first crop will be 500,000. I kill the chrysalis (which I forgot to tell you) in a house, such as is used for drying fruit. It costs but a trifle, and in one night the work is done, and well done. I want nothing else, neither for speed, cheapness, or perfect work.

I have scribbled this in a great hurry. But being on my bobby, I have kept him going. O! the best reeler in Philadelphia, wrote to me last mail she would come to Tennessee, if I said so. I will say nay, I will not insult my Hawkins county girls by an instructress, who knows no more than they do, after they have learned themselves, with my instruction, second-hand from you. Mr. M. of B. says he stopped for the cold weather. I reeled when the thermometer was nearly at zero; and two hours after night besides, every night until 1st March. But I must dismount. FREDERICK A. ROSS.

P. S. I forgot to say, I reeled my pound to the reel in the day as I promised you, and I wish I could send you one of the hanks. The cocoons were fine, and the silk is beautiful, like threads of silver, and as even and smooth as glass. That best day's work as to quantity, is not surpassed by any other in quality. And that day's work can be done any time with such cocoons, and more than that, although the average is nothing like it in quantity. The cocoons are indifferent.

F. A. R.

[We must remind the reader that the girls who reeled the silk for Mr. Ross, had never seen a cocoon or a reel, till last fall; that they learned to reel under Mr. Ross' direction, from instructions given in the Silk Journal; and to this day have never seen a foreign reeler or a thread of foreign reeled silk.—ED. S. J.]

ADMISSIONS IN FAVOR OF THE NEW FOUR-FIELD SYSTEM. TEMPORARY WINTER FARM-PENS. RYE A SUBSTITUTE FOR CLOVER IN OHIO.

For the Farmers' Register.

It is much to be regretted that the desire to appear consistent so often prevents even ingenuous persons from retracting wrong opinions. In making the following admissions in favor of the new four-field system, which gives three grain crops in four years, I shall endeavor, as far as I can, to divest myself of all such feeling; having been, as you know, a warm opposer of this system, in some of the early numbers of the Farmers' Register, and having found on trial that many of the objections these urged against it, by myself and others, are entitled to much less weight than I then supposed. At that time it did appear to me that the draught on the land, in producing three successive grain crops in four years, was much too heavy to admit of much improvement, unless on land of uncommon fertility; though I was much staggered in this opinion by the great success of several of the most skilful cultivators of the soil on James River, who highly recommended this system after a trial of some years, and after having greatly increased their crops, and evidently having effected a great degree of improvement on their fine estates, though practising this system all the time. You will understand me as referring particularly to my worthy friends of Shirley and Westover, whose valuable communications to your paper have been so instructive and interesting to many of your readers, myself among the number.

After a full and fair trial of this system, but on

my best land, I am now prepared to admit that a very considerable degree of improvement may be attained under it on all lands that can be relied on with certainty to bring clover, unless light soils should prove an exception; and I rather incline to think that land of that description will not bear as hard tillage. It must, however, in candor, be stated that I have made a very free use of lime on the farm on which this system has been in operation for some years past; and by ensuring the clover, and otherwise improving the land, it has undoubtedly been a great aid to me. It must be recollected, too, that this system has been so far modified in this instance as to give very full crops of corn, there being a light field attached to the farm, which has been exclusively devoted to corn ever since this system was first adopted. The crops of wheat and corn have both increased very considerably on this farm, and one year, a very remarkable one with us, I harvested nearly or quite 24 bushels of wheat throughout the crop per acre. The part, however, after a previous crop of wheat and corn, amounting to about 105 acres, had failed completely as a fallow; which no doubt made the 3d crop much better than it would otherwise have been. On an adjoining farm, which has been subjected to the three-field system, and has had the benefit of lime and a standing pasture, clover and plaster, and the fields been never grazed till the fall, and then very lightly, the degree of improvement I consider to have been far greater than on the farm in four fields, which is of rather better quality naturally; and ought therefore to have improved faster, if the system pursued had been equally ameliorating. Of course great care is taken in collecting and applying putrescent manures, but the one farm has no manner of advantage over the other in this respect. The crop of corn of last year on this farm will, I believe, make fully 8 barrels per acre, which is the largest yield from a field of the same extent that I have ever known to be obtained in this neighborhood. This crop of corn was laid off in checks, 2 stalks left in a station; and cultivated after the first ploughing with the double shovel plough, except the wetter portions of the field, comprising not more than a fourth of the crop, which we were compelled to have in beds that the water might run off readily. On the whole I am convinced that land of original fertility, with the aid of a standing pasture, lime, clover and plaster, and with proper attention in collecting and applying other manures, may be improved as rapidly as necessary in three fields, and that it is an excellent system with these aids. In comparing the two systems, I should say that the amount of sales would be considerably greater under the four-field system, but that the expenses would also be greater, and that the improvement would be steadily progressive, though less rapid than under the three-field system. On a fine wheat estate, where the teams and labors are equal to it, I should unquestionably prefer the four-field system, as combining a great deal of profit with sufficient improvement. Many of your readers may consider this subject to have been long ago exhausted; but as far back as in 3d vol. of the Farmers' Register, I engaged at some future time to give the results of my experience in regard to this system, when I should have tested it fairly; and I trust that I shall be excused for having redeemed that promise on the present occasion, and that I will not be found to have shown too strong a leaning to my former opinions.

The practice of having winter farm-pens contiguous to the land to be improved, is, I believe, very general on the lower James river, and cannot be too highly recommended. In driving the cattle to and from water, I have observed, both here and elsewhere, that the land is sometimes very much and very extensively poached, and that the servants, whose business it is to drive them to water, are very much exposed in bad weather. It occurred to me several years ago that a well in our flat country, for the use of the cattle during winter, would be a great comfort both to them and to the servants, and that the expense of digging would be very inconsiderable. I accordingly adopted the plan, and can confidently recommend it to others, situated as we are, where water may be obtained by going down about 20 feet. Some of these wells are kept open to be used on future occasions for the same purpose, and others are filled up as soon as the cattle are removed. In the tobacco country, where, however, my observation has not extended very far, I do not recollect ever to have observed their temporary farm-pens in use, and I cannot but believe that the general use of them in that region would be attended with great benefit. In this way, remote parts of a plantation may be improved, which would never receive the manure if made at some central point, because the labor necessary to get it in place in the spring can never be spared at that busy season, if the manure has to be hauled any great distance. Where this plan is pursued, the rough food and litter for the cattle are carried to the farm-pen, from time to time, during the winter, as convenience and necessity require, and in the busy season of spring, the whole mass is at a convenient distance from the land to be improved. It must be recollected, too, that in the spring oxen are weakest, and least able to endure hard work, and to lighten their labor at that busy period is a great point gained. Perhaps it may be thought that I am trespassing upon the patience of your readers, in formally recommending temporary winter farm-pens; but I beg that it be recollected, that this practice, old and common as it is, may yet be unknown to many of your subscribers, and to every such one I can venture to say that these farm-pens properly managed will be found a valuable aid in the improvement of all large farms. By-the-by, the habits of selecting subjects that are novel, and overlooking whatever is not much out of the common road, though perhaps far more useful, is, I verily believe, one of the greatest impediments to the general diffusion of agricultural knowledge. Agriculture has been practised too long to admit of many new discoveries being now made; and, therefore, to ascertain and collect the most valuable practices, is as much as any ordinary man at least can hope to achieve. Indeed I am fully of opinion that if all the most valuable practices now known, even in Virginia, could be collected and brought into successful operation on any one farm, the result would be such as to astonish even the most sanguine cultivator of the soil.

It is much to be lamented that there are so

few fixed principles amongst agriculturists, and very difficult to account for. There is scarcely a single point that seems to be fully settled, and that we do not hear controverted by men of sense and experience. As long as this continues to be the case, we may despair of any great progress in improvement. Many very successful and observant farmers, with the advantage of long experience too, contend for grazing from the time clover is fully headed, as necessary to ensure heavy crops of wheat; taking care, however, not to graze the land too long, or too closely; and this indeed appears to be the prevailing opinion amongst the best managers of my acquaintance. The experience of others, however, is that the more clover turned in, the larger will be the crops of both wheat and corn, and the greater the improvement of the land. Perhaps the use of lime and marl, or perhaps the nature of the soil, may satisfactorily account for this difference of opinion.

I have recently learned, from the highest authority, that rye is fast substituting the place of clover as an improver in Ohio. The rye is sown at the last working of the crop of corn, and at maturity hogs are turned in to get all the benefit they can from the grain, on which they are said to thrive very rapidly, and the land is thought to be very much improved at the same time. There is often a second crop, without other cultivation than is afforded by the rooting of the hogs, from the seed left in the straw, or dropped by the hogs. Rye is not very well suited to this climate, but perhaps on light, thin lands, that cannot be relied on to bring clover, this may prove to be a valuable practice even here.

On all lands adapted to the clover culture, the result of my own very limited experience is, that clover is the most valuable of all putrescent manures, because applied at less expense and more extensively than any other means of improvement, known to me, will profitably admit of. I would decidedly prefer giving up all other manures in use amongst us, with the exception of lime and marl alone, rather than abandon the cultivation of clover, of which it seems to me very difficult to give the land too much. Indeed, without the use of clover, the effects of lime and marl would in my opinion be diminished at least one half.

Our wheat and clover are sufficiently advanced, and promise well, but the prospect for corn is bad beyond precedent. W. B. H.

Prince George, May 15th, 1841.

HESSIAN FLY AND OTHER WHEAT INSECTS.

From the Farmers' Cabinet.

The Hessian fly, I believe, first made its appearance on Long Island, N. Y., in 1776, or soon after the Hessians were there, and is supposed to have been introduced among some straw which they brought with them; hence the name; but the late Judge Peters, that great friend and patron of agriculture, in his notices for a young farmer, says, that the insect was unknown in Hesse, "that its name does not prove its importation, for that appellation was bestowed during our revolutionary excitements, when every thing we disliked was called Hessian." The insect has been accurately described by Mr. Say and Dr. Chapman; but Mr. Say was mistaken respecting the deposite, as the aperture which he noticed in the sheath of the leaf, was occasioned by the insect passing into the winged state, and not perforated in the act of depositing its eggs. The fly is of a dark color, about the size of the mosquito, and the male much like it, except the wings; the body of the female is larger; the wings rest horizontally, and where they join the body are almost pointed, gradually expanding towards the other end, where they form nearly a semicircle. The egg is scarcely discernible to the naked eye, is oblong, of a pale red or amber color, and placed in the gutter of the leaf, from half an inch to an inch or more from the stalk; the caterpillar, of a pale red color, is hatched in a few days' time, (according to the state of the weather,) and passes down the leaf to its junction with the stalk, thence between the sheath and stalk, to near the root or joint; it there becomes stationary, feeds on the sap of the plant, and, being blanched by its covering, is mistaken for the egg. The first deposite takes place from the fifteenth to the last of April, (as the season may be,) changes to the pupa from the first to the middle of May, and evolves in the winged state, the latter part of that month. The second generation commences from the first to the middle of June; the fly chooses the stunted plants, and deposites both on the top and underneath the upper leaf, and the larvæ pass to near the two upper joints, but are found mostly about the upper, and in such numbers as many perish for want of food, the increased number being so disproportioned to the plants which suit their purpose; I have counted upwards of two hundred eggs on a single leaf. The third deposite is made in the manner of the first, and commences about the fifteenth or later in August, and is continued on until cold weather; the irregularity of this generation is occasioned by the various situations in which the pupa of the second is thrown, it is lodged in the straw of the stunted plants, so that in harvesting, much of it is scattered about the stubble-fields and the rest is carried to barns or stacked; such as is early exposed to heat may produce a fourth generation, whilst that which is covered till winter may not give a third.

On discovering a fly in the act of despositing, I secured it, and on examination (making the best calculation that I could, and not knowing whether it had deposited any eggs before) I supposed it to contain one hundred eggs; if such be the fact, the first deposite would be one hundred; the second ten thousand, and the third one million, all in the course of one year; happily, however, they have enemies which vastly reduce their number.

The only plants, according to my observations, which are subject to the depredations of the fly, are wheat, rye and barley; rye, owing to its early spring growth is not much injured; grains should be sown (in this climate) about the first day of October, as that sown afterwards suffers more from the winter than the fly.

The only remedy which I have any confidence in, must be applied to the second, or summer generation, (it is the only one that I think can be assailed with any prospect of success,) whilst in the pupa state, by ploughing the stubble-fields before putting in the next crop; in that case,

grass-seed could not be sown among the grain; but by changing the course of cropping, beginning with wheat, rye or barley, followed by corn, and ending with oats and grass, the difficulty might be avoided; nor need the stubble be ploughed till towards the first of April, or any time during the winter; plants about stacks and other places must also be attended to; and let it be remembered that farmers must pursue the same plan, as it is in vain for a few individuals to attempt an object, whilst thousands are united to oppose it. I will further observe, that the surest way to raise a good crop of any grain, subject to injury from the fly, is to put the lands in a proper state of cultivation, as where that is the case, and when the season proves favorable, little or no damage will be sustained, although the fly may be very numerous, as it certainly is every year. It is folly to sow wheat on a poor soil.

The insect described by Miss Morris is not the Hessian fly, and I think she is mistaken in the manner of depositing its eggs; it appears to be the same as that noticed by me in 1823; it has three generations in the course of a year, and is observed a few days earlier than the Hessian fly, and the same remedy may be applied to both; the spring and fall generations are to be found near the roots of the plants, and the summer are at the several joints. There is another insect lodged in the straw above the upper joint, which causes the premature appearance of ripeness of the head and prevents the grain from forming; it has not yet done much injury, but may hereafter increase.

There is also an insect which attacks the roots of wheat and causes the stunt or sedge; it is probably a species of aphis, and the remedy must be applied to the soil. I would recommend salt or ashes; perhaps lime might be good.

JAMES WORTH.

Sharon, Bucks County, 1st March, 1841.

PROPOSAL TO TRY HUSSEY'S REAPING MACHINE.

To the Editor of the Farmers' Register.

Baltimore, April 14, 1841.

As some uncertainty is felt amongst the farmers of your state with regard to the usefulness of my reaping machine, I beg permission to make a few remarks in your valuable journal, which, as coming from me, will be taken for what they are worth. I, last spring, sent to order several reaping machines to gentlemen in the counties adjacent to Richmond, and followed them myself, early in the harvest, to put them in motion. A part of these machines were on my former plan, which had been proved several years, such as had been favorably noticed in your journal, and part were on a new plan as respects the horse-power, which had never been proved, but had been very generally preferred for their simplicity, by those who examined both at my manufactory; the former gave full satisfaction as far as I had any knowledge, and especially so while I was present; the latter proved defective in a certain arrangement to accommodate the raker, and in a piece of cast iron which should have been wrought. I discovered the principal defect in five minutes' cutting in Goochland county. Fearing the disastrous consequences which might follow to the credit of the machine, I immediately wrote to all who had chosen machines of this description, apprising them of the difficulty which I had met with, and describing the alteration necessary to be made, and proceeded myself with all haste to Charles City county, where I considered my assistance most necessary. One gentleman in that county had ordered by letter such a machine as had been recommended by the Delaware Agricultural Society. Such was of course sent to him; this was one of my former plan. Two other gentlemen of the same county employed a friend to act for them, who, on examining the machines at my manufactory, aided by a professed mechanic, made choice of two machines on the new plan. On my arrival in Charles City, I soon discovered that the gentlemen who had received these two machines were not satisfied with the choice their friend had made, believing the other kind to be the best. One of these gentlemen informed me, that he did not get the machine because he needed it, being overstocked with hands; it was, (under these circumstances,) not to be wondered at that he should regret the purchase when he found that his machine, which he considered of an inferior kind, could not be used without alteration, although it required but one day's work to alter it. I mention this, believing that whatever unfavorable reports have spread in Virginia have chiefly arisen from these circumstances. It should be borne in mind that it requires experience to use any machine with success, however good the principle may be; hence one so new to the community should not be condemned too hastily, while so great an amount of evidence from Maryland can be produced in its favor. It is admitted that it may not do every thing that may be expected of it when proper management is not used; for instance, when the wheat is rank and mixed with grass, the cutters should be raised to the highest point; if it be thin and short they should be put at the lowest point; but this is not often thought of, and more seldom practised, at first, especially when the farmer, as is often the case, depends entirely on his laborers to manage the machine—added to this seeming difficulty, the awkwardness of his hands before they become practised. The opposition and *designed* awkwardness of a class of cradlers, whose interest it is that the machine should fail, and the apprehensions thus created that the machine may not prove useful, will be very likely to tire the patience of the farmer, however well the machine might work in other hands. The consequence is, the machine would be represented (and honestly and correctly according to the impressions they received by the farmer,) to be of doubtful utility; and others are deterred from purchasing.

Whether this machine is or is not a useful invention, should by this time be a settled question. That it is not so settled in many sections of the country may be accounted for by the very short time it can be used in each year, and from the fact that, like all other machines, it must be tried, improved, and tried again. Hence the reaping machine requires more time to perfect it than those improvements which can be experimented with every day in the year.

Wishing, for my own interests, as well as for the interests of agriculture, that the machine should be better known in Virginia, and believing that

while you would do justice to the mechanic, you are particularly watchful that the farmer be not imposed upon, I will very respectfully make the following proposition to you, hoping it will receive your favorable notice. I propose to send to you, without any expense to you whatever, two reaping machines; one of each kind, to be wholly subject to your control, and direction, so far as to obtain for them such a full and fair trial at the next harvest in grain of every description and under all circumstances as shall be fully satisfactory to yourself and your agricultural friends. I will hold myself in readiness to attend upon them at any time and place which you may fix upon. As you will not probably interest yourself in this matter unless it should promise some useful result, I have procured for the consideration of yourself, and your readers, the annexed certificates, which refer to machines of the new plan only; the irdeficiencies were however remedied before they left my manufactory. Certificates equally full can be procured for machines on the old plan.* OBED HUSSEY.

Mr. Hussey's proposal and plan of trial of his machines are fair and liberal, and we trust will serve to settle the question as to the degree of their value. As we were desirous of obtaining the best means and subjects for a full and accurate trial, and not being so situated as to be able to perform directly the services required of us for this end, some time has been necessarily lost in making the satisfactory arrangements, which we are now authorized to announce. Wm. B. Harrison, esq., at our request, has consented to take charge of the trial of the machines, and have it properly made during his harvest, on his estate, Upper Brandon, on James River, Prince George county. There could be no better field selected for a full and complete trial, than this estate offers, nor one better qualified than its proprietor to observe accurately and report correctly the results—which will be done through the Farmers' Register.—ED. F. R.

*The certificates are among the advertisements of this number.—ED. F. R.

CAUTION TO SILK CULTURISTS.

To the Editor of the Farmers' Register.

Stafford, Va., May 15, 1841.

As the season for beginning the rearing of silk-worms is near at hand, and as some of your readers will commence the business this summer, I hope you will give space in the Register for a few brief cautions, that may be useful to the inexperienced.

1. To all new beginners I say, do not hatch too many worms at first, nor expect to derive much profit from your first experiment. The knowledge derived from experience, which alone can enable you to conduct the business with economy of labor, will amply remunerate in subsequent operations all who will have patience and perseverance enough to pursue the business a sufficient time to learn how to manage it well.

2. Beware of expending much for new and highly puffed fixtures, until you learn from experience that they will accomplish all, or nearly all, that their inventors and advocates claim for them. An *old* practice has been sent forth under a *new* name, (the "non-cleaning system,") which, I fear, will be productive of mischief in several ways. The general impression made on the minds of the inexperienced is, that cleanliness may be dispensed with. Beware of practising on this opinion. I have fed with branches* for several seasons, as late as the 25th of June, and the plan works well, with proper attention to cleaning, and when the mulberry trees are judiciously pruned. The mulberry trees must not be pruned at the farthest later than the 1st of July, and then the pruning should be conducted with regularity, and the ground ploughed or hoed, immediately after the operation. With a sharp pruning bill take off from 1 to 2 feet of the top, and cut every lateral branch close to the main stem. Trees pruned in this manner, and cultivated *immediately*, will yield an abundant supply of leaves, the next year, and you will have a well-balanced tree; but if one or two small branches be left, they will attract nearly all the sap, and the shoots from the other joints of the stem will be feeble. But a reckless mowing down of the trees in July and August will soon end in their destruction. This practice has been known to destroy the elder, (sambucus nigra,) that *hardy* pest of American farmers.†

3. Leaves gathered in the heat of the day must be spread and stirred with a stick before they are given to the silk-worms. If given to them when warm they produce disease. And whenever large quantities of leaves are brought to the feeding room, to be kept even for one or two hours, care should be taken to spread them in thin layers. If fermented leaves be given to the worms, their destruction will certainly follow; although most of them may live until near the period for spinning.

4. Let the silk-worms have (especially in the last age) an abundant supply of fresh air. The windows should be kept partially open, at least, *day and night*, and even during thunder storms. A modern inventor has found out that the admission of the exterior air is not very important. He ventilates the worms, and is not solicitous about keeping up currents of air through the building. Beware of this *crude* and *new-fangled* notion.

5. After the worms have formed the cocoons, attend carefully to the directions for killing the chrysalides, found in the Farmers' Register and the Journal of the American Silk Society. If the use of camphor, as recommended by Miss Rapp, should be practised, strict regard to her directions, as to time and manner, is essential. The cocoons must be carefully assorted, and if kept in the box too long they may be seriously injured by fermentation. LAYTON Y. ATKINS.

* The practice of feeding silk-worms by laying over them branches of the mulberry has probably been pursued at Brousa, in Asia Minor, for several centuries. (See an extract from a letter of Miss Pardoe, published in the Farmers' Register, vol. vii. p. 412.

† Some persons have adopted the notion that the morus multicaulis cannot be killed. Let such pursue the *mowing plan* in July and August, for one or two summers, and they will find themselves in the condition of the man who killed "the goose that laid golden eggs."

GENERAL RESULTS OF DIARY OF THE WEATHER, KEPT AT FORTRESS MONROE, (OLD POINT COMFORT,) VIRGINIA.

Year.	Month.	THERMOM.					WINDS.									WEATHER.					RAIN.
		Highest degree.	Lowest degree.	Mean temperature.	Hottest day.	Coldest day.	Days North.	Days North-West.	Days North-East.	Days East.	Days South-East.	Days South.	Days South-West.	Days West.	Prevailing.	Days fair.	Days cloudy.	Days rain.	Days snow.	Prevailing.	Inches.
1836	July	86	67	75	25	5	2		9	½	3	9½	7		S	22	9	6		Fair	6 3-10
	Aug.	86	65	75	1	10	1½		12	4	2½	2	8	1	NE	24½	6½	9		do	5 2-100
	Sept.	88	62	73	20	30	1		11½	2	5	1½	8	1	NE	27½	2½	3		do	8 1-100
	Octob.	71	41	56	3	27	2	3	9	1	2	4	8	1	NE	24	7	4		do	2 7-10
	Nov.	58	25	44	10	26	4	5	5	2	1	5	1	6	W	23	7	5	1	do	4 7-10
	Dec.	62	18	37	13	28	6		3	2	5	5	5	4	S	24	7	6	1	do	3 4-10
1837	Jan.	46	14	32	31	2	7	3	3			4	5	9	W	22	3	2	4	do	1 6-10
	Feb.	60	18	38	27	18	3	1			4	5	2	13	W	19	3	5	1	do	2 5-10
	Mar.	62	26	45	21	3	6	1	1		2	10	3	8	S	23	4	4		do	2 4-10
	April	78	34	54	19	3	4⅓	⅓	1	2	1⅓	19⅓	1		S	22	6½	1½		do	9-10
	May	84	54	35	30	2	2½	½		5½	5½	8½	2	6½	S	23	5	3		do	2 2-10
	June	96	62	75	4	19	5		½	2½	3	12½	⅓	6	S	20½	6½	3		do	3 5-10
	July	96	66	79	31	25	4			10	4	10	1	2	S	18	10	3		do	2
	Aug.	94	61	77	30	24	1	7	6	8	2	6	1		E	23		8		do	9 5-10
	Sept.	92	58	68	28	16		4	7	14	3			2	E	19	5	6		do	5 6-10
	Octob.	89	42	64	24	27	10	3	7	3	3	1	3	1	N	23	6	2		do	5-10
	Nov.	73	30	54	12	27	2	4	10	2	6		5	1	NE	22	2	6		do	2 9-10
	Dec.	66	30	46	3	14	1	5	17		4	1	3		NE	18	6	6	1	do	9
1838	Jan.	67	24	45	18	11	6	11	5	2	1	1	3	2	NW	20	6	4	1	do	2 7-10
	Feb.	54	17	33	8	3	2	6	6	2	1	1	4	6	N	17	4	4	3	do	1 8-10
	Mar.	69	27	48	24	1	3	3	11	3	4		6	1	NE	17	7	6	1	do	2 2-10
	April	78	34	54	28	20	1	2	6	8	4	2	3	4	E	18	6	6		do	2 8-10
	May	84	47	63	22	9	2	1	6	6	4	4	5	3	NE	19	6	6		do	1 1-10
	June	88	60	41	11	6	2		1	9	4	4	6	4	E	20	4	6		do	4½
	July	94	72	82	20	13	1	1	4	8	4	2	7	4	E	26	5			do	2 4-10
	Aug.	92	71	81	11	2	1	1	6	9	7	3	4		E	28	1	2		do	1 3-10
	Sept.	89	50	72	1	23	3	1	15	5	3	1	2		NE	14	11	5		Cl'y	16 4-10
	Octob.	76	43	59	5	30	4	7	6	2	1	1	8	2	SW	23	2	6		Fair	4 6-10
	Nov.	69	19	49	15	26	2	7	4	4	1	4	2	6	NW	15	10	4	1	do	3 7-10
	Dec.	59	22	38	12	24	2	5	7	1	2	5	4	4	NE	16	9	4	2	do	1 6-10
1839	Jan.	62	21	39	11	24	0	14	9	1			6	1	NW	18	5	5	3	do	8 1-10
	Feb.	64	28	43	23	6	1	4	6	1	2	5	9		SW	15	7	6		do	4 7-10
	Mar.	72	20	48	19	4	1	4	8		3		14	1	SW	17	5	7	2	do	5 3-10
	April	80	42	56	28	15	4	2	10		3	1	10		SW	17	8	5		do	3 7-10
	May	85	52	68	25	4			5	1	8	5	10	2	SW	18	8	5		do	5 5-10
	June	92	60	72	13	2		3	4	1	8	4	9	1	SW	20	5	5		do	4 8-10
	July	93	63	80	31	6	1		4	1	9	2	14		SW	21	3	7		do	4 5-10
	Aug.	92	59	74	8	31	1	3	8		6	1	12		SW	13	7	11		do	14 2-10
	Sept.	86	52	69	9	13		3	8	1	6	2	10		SW	20	8	2		do	1 2-10
	Octob.	76	54	63	4	2	1	1	16	2	4	1	6		NE	18	9	4		do	6 8-10
	Nov.	68	29	47	15	22	1	7	8	1	2	1	7	3	NE	15	11	4		do	3 6-10
	Dec.	50	28	39	3	30		16	6		3		6		NW	16	11	3	1	do	9 6-10
1840	Jan.	58	17	34	30	2		9	8	1	2	1	9	1	SW	19	8	2	2	do	1 6-10
	Feb.	67	22	47	27	4	3	4	4	5	5	6	2		S	19	7	2	1	do	3 2-10
	Mar.	72	33	51	17	11	1	3	3	3	7	1	9	4	SW	18	8	4	1	do	4
	April	82	50	61	25	1		1	8	3	8	6	3	1	NE	21	7	2		do	5 9-10
	May	82	52	67	4	11	2	2	6	5	3	4	6	3	SW	19	7	5		do	5 9-10
	June	88	63	74	12	7	1	1	6	2	5	6	7	2	SW	20	7	3		do	11 1-10
	July	92	68	75	28	3	1		9	1	6	7	5	2	NE	23	1	7		do	13 5-10
	Aug.	90	69	78	6	7	1		6	5	3	7	8	1	SW	24	2	5		do	5 5-10
	Sept.	86	58	69	9	22	2	7	9		1	5	6		NE	25	1	4		do	7 6-10
	Octob.	82	38	63	2	26	1	2	4	7	4	7	6		S	25	3	3		do	6 4-10
	Nov.	64	33	49	6	19	3	8	9	1	3	1	2	3	NE	24	2	3	1	do	2 8-10
	Dec.	58	19	45	3	19	5	6	10	2			5	3	NE	25	1	5		do	6 6-10

THE USE OF AN OWL IN KILLING CROWS.

From the Frankfort (Ky.) Commonwealth.

A man ought not to be *hooted* at, if he does tell a story about an owl, provided the anecdote tends to the promotion of the great interests of agriculture. And we may as well promise here, that we do not mean to talk about one of those little screeching things, that sits on the eaves of houses during the livelong night, watching for mice, and uttering the most piercing lamentations all the while. No, indeed: we are alluding to one of those whapping big fellows that sometimes raises a war-whoop right over your head as you are riding through the dark woods, and makes you feel, for a moment, as if your scalp was gone. Speak of your hair standing on end, at tales of ghosts, and all that sort of stuff! Those are mere fireside affairs, and don't last much longer than you are toasting your shins. But if you wish to know something of a shock that will drive through your bones into the marrow, just go by yourself through a beech flat of a dark night, with your mind running upon Indians, robbers, and other such sweet fancies, until you feel as if you hadn't half an inch of breath left any how—then, let one of those night eagles thunder—whoo-hoo, whoo-hoo, whoo-hoo-agh into your lugs, and, by gracious! you'll think that you've become an eternal fixture in the shades. It does to laugh at when you get home, but for the moment it is capitally horrific. There are many people who never saw one of those big owls, or heard one either, and we will therefore for their benefit say, he is a large bird with a huge head, a profusion of rusty feathers, a round gray eye, that seems to look everlastingly ahead and right through any thing that is before it, has very formidable talons, and, in a word, is the king of all things that fly in the dark. He is carnivorous in his appetites, and walks into young rabbits, partridges, and that kind of fry, with remarkable unction. He does not make friends of many living things, which probably arises from his habits of midnight assassination, and skulking when the rest of the world is in motion. He moves like a shadow, not making the least noise in his flight, and he is, upon the whole, a most excellent pattern for a cut-throat. Yet, with all his advantages of size, position and profession, he is not suffered to be the sole marauder upon the great common of the poultry yard, for he has an enemy of a most determined and implacable character. The enemy is not, as might be supposed, armed with weapons of war equal to himself, nor with the same awful voice, nor even with the same fierceness of eye, yet he makes up with combination and vigilance what he wants in strength, and just let an owl show himself in the light of the sun, and forthwith a legion of crows will be upon him, making such a clatter about his ears that he will find the very day hideous, and ignominiously fly before the black regiments that are charging upon him. And this brings us to our story.

A farmer living in this county, has been so exceedingly annoyed with crows that he was willing to hunt them by militia companies—to offer rewards for their heads, to poison them, or to kill them off by a legislative tax. Year by year was he molested by these depredators, which would tear up his corn by the acre, pick out the eyes of his lambs, fly off with his young chickens, and annoy him in every conceivable way. It was in vain that he took his gun upon his shoulder and went in pursuit, no caution that he could devise would bring him in shooting distance. The rascals would caw at him, and caw at him, and snigger to see how he "larded the lean earth," as he walked along of a hot day, vainly following on their provoking banters. Neither he nor his man of straw in the field was the least terror to the evildoers, and they plundered with perfect impunity. Our Franklin farmer meditated long and deeply upon the manner in which he should redress his wrongs, and like a true philosopher, he sat himself diligently to the study of *the nature of crows*. He soon found out all their system of sentinels, their notes of alarm, their sounds of encouragement, &c., but from these he could gain no knowledge that would avail him.

While, however, he was one day watching a large flock, his attention was arrested by an unusual commotion among the black scoundrels, and forthwith they all darted in one direction. He beheld in his surprise a simultaneous attack upon a large owl which had imprudently ventured forth into the light, and such another battle he never did see, until at last the owl, like himself, was fairly vanquished by the crows, and made a precipitate retreat. Our farmer was too interested a spectator of the combat not to reflect much upon its character and result, and all at once it occurred to him, that, if by any means he could get possession of an owl, he could make him decoy the crows within a reasonable distance. Luckily for him, he was soon enabled, by a successful shot, to break the wing of one of the largest of the tribe, and he lost no time in putting his scheme in operation.

Accordingly, at early dawn he sallied forth with dire intent, and surcharged with the spirit of extermination and venom. He selected a tree near to his fence, but conspicuous in the field. A lad was sent up the tree to put the owl upon his perch and the farmer ensconced himself in the corner of one of the panels. Scarcely were these things completed, before a distant and well known caw broke upon his ear, and anon the air was darkened with a flight of crows, all making, like the Cuirassiers upon the Scotch Grays, a furious onslaught upon the wounded enemy. "Ha, ha, cried the farmer; I've got you at last!" and bang went his gun, and down tumbled a couple of crows. But the fire of the gun had no effect upon the rest. They still continued in furious rage to fly at the owl, and ever and anon the farmer would fire away, and at every crack he brought 'em. Faith but it was a goodly sight to see how soon the owl got into the hang of the game. For, at each dreary pause, while the farmer was reloading—the sagacious captive would ruffle his feathers and snap his bills together, and manifest to his enemies the most aggravating and insulting behavior. This would exasperate them beyond bounds, and at him they would come again—bang would go the gun, and at every crack the owl fairly chuckled with delight, giving one of those knowing winks, which was as much as to say "don't we nick 'em." The slaughter was continued until the farmer desisted, from mere weariness. He then went home like a conqueror with his heaps of slain, and gave his

new ally a stupendous feast on the bodies of his slaughtered foes. Every day was this manœuvre repeated, and with the same success, until nearly every crow about the plantation had been killed. The fame of this affair soon spread to the surrounding plantations, and every neighbor borrowed the owl and put him to the same successful and profitable purpose. As may be supposed, good care was taken of the owl, and for two seasons he was the greatest benefactor of the neighborhood, and had been the death of as many of his foes as Ghengis-Khan or Napoleon. Unluckily on one occasion he sallied forth alone from his confinement, and not being able to fly, he attempted to swim across the Elkhorn. This was a new and untried element to him, and, like other renowned warriors and statesmen, he was lost venturing upon an experiment. That he was put to a great public use, there is no doubt, and if ever a bill is again introduced into the Legislature "Providing for the killing of crows," it would be but an act of justice to put in a section directing a monument to be erected to Joe Davis's owl.

Whoever doubts the truth of the story has only to try the experiment with an owl, and he will soon find that there is no joke in the matter.

ON GATHERING ASPARAGUS.

From the Magazine of Horticulture.

In all the books of gardening which I have seen, the direction for gathering asparagus has always been to cut it several inches below the surface of the ground, as soon as the stalk has advanced a few inches above it. The asparagus generally brought to market is cut in this way, the upper half being green and tender when cooked, the lower half white, tough, and uneatable. The experience of many years has taught me that it is far better to let the asparagus grow to the height of ten inches, or a foot, and then to gather it by breaking with the fingers, as low down as it is tender and breaks easily, which, when the weather has been warm, is generally from six to ten inches. Asparagus, thus gathered, will be found to be much finer, the *whole* being tender and eatable, the produce much greater, and the process attended with no disadvantage whatever. Asparagus even. two feet high, will be found fit to gather in this manner, if at any time it has outgrown the consumption or escaped attention, which indeed was the occasion on which this new method of gathering occurred to me. I have since always practised it. Let those who are fond of asparagus give it but one trial, and they will never again resort to the old system. O.

TRANSFORMATION OF OATS INTO RYE.

From the Year-Book of Facts.

Dr. Weissenborn represents a statement of this phenomenon to have been corroborated in the last annual report of the Agricultural Society of Coburg, which asserts this transformation to take place if the oats be sown very late (about Mid-summer-day,) and cut *twice* as green fodder before shooting into flower-stalks, whereupon a considerable number of the oat plants do not die in the course of the winter, but are changed in the following spring into rye, forming stalks which cannot be known from those of the finest winter-rye. "Let any one sow the oats during the latter half of June, and the transformation in question will certainly take place!"

[This statement may be thought valuable confirmatory evidence by the advocates of the transformation of wheat to cheat. On the other hand, too much proof is sometimes as bad as too little; and when it is maintained (as above) that oats are changed to rye—and in other cases it is as firmly believed that wheat is changed to spelt, or darnel, and to cockle, and flax to cheat—the stoutest advocate of the transmutation of any *one kind only* may begin to be embarrassed by the superabundance of evidence, for similar and yet very different facts.—Ed. F. R.]

THE MILK SICKNESS.

From the Baltimore American.

Besides many other articles in the April number of this Journal, [American Journal of the Medical Sciences,] there is one of much importance, by Geo. B. Graff, M. D., of Illinois, on the milk sickness of the west. Our readers no doubt remember seeing various notices of the sufferings and mortality which this disease has caused in the western states. It attacks beef-cattle, horses, sheep and goats. Cattle may be affected to such a degree as that their flesh and milk will produce the disease in man, and yet the cattle themselves manifest no unhealthy symptoms. In a severe degree, the disease in the inferior animals is attended with formidable symptoms.

Dr. Graff his given a full description of the sufferings as they occur in man; and he says, a minute quantity of cream, butter, or cheese from the milk of an infected cow, although without any distinguishing appearance, odor, or taste, will develope the disease. The most violent and fatal form, it is generally thought, is produced by eating a few ounces of infected beef. The cause of the disease in animals is not known; it appears to be limited to circumscribed localities in all the western states, especially in Illinois. The disease can be traced in one locality for nearly a hundred miles, in a vein of variable breadth, parallel to the Wabash river, in Indiana. Not the least important part of Dr. Graff's essay is a paragraph in which he bears the following testimony to a criminal, and almost incredible, disregard of human life and happiness.

"There is a murderous practice now carried on in certain districts, in which the inhabitants will not themselves consume the butter and cheese when manufactured; but with little solicitude for the lives or health of others, they send it in large quantities to be sold in cities of the west, particularly Louisville, Ky., and St. Louis, Missouri. Of the truth of this I am well apprised by

actual observation, and I am as certain that it has often caused death in those cities, when the medical attendants viewed it as some anomalous form of disease, not suspecting the means by which poison had been conveyed among them. Physicians of the latter city, having been questioned particularly on this subject, have mentioned to me a singular and often fatal disease which appeared in certain families, the cases occurring simultaneously, and all traces of it disappearing suddenly, and which I cannot doubt were the result of poisoned butter or cheese."

SILK-WORM REARING IN ARKANSAS. IMPORTANCE OF CALCAREOUS SOIL TO GRAPE VINES.

To the Editor of the Farmers' Register.

Washington, Ark., March 5, 1841.

Believing that every new experiment in silk-growing, on however small a scale, that has proved successful in a first attempt, deserves a passing notice, I have to contribute my mite, in the hope that it may not be unacceptable.

I received, on the first of March last, from G. B. Smith, esq. of Baltimore, a package of silk-worm eggs, which began hatching on the 4th—having no doubt been heated in the mail-bags to the hatching temperature. They were left exposed in a cool room, to all the vicissitudes of heat and cold, no fire being ever lighted in the room, with a view of testing the *natural* method, strictly. The worms were kept supplied with young multicaulis leaves, of which there were plenty, and each day's hatching kept separate. They continued to hatch, 20, 30, 50, to 100 a day, for the space of more than six weeks—the thermometer frequently falling as low as the freezing point, and sometimes ranging thirty degrees in twenty-four hours. The worms all matured, without the loss of one that was discovered. And of the same parcel of eggs, on the same sheet of paper, those first hatched commenced spinning before the last were hatched. The supply of eggs being small, I was desirous of not losing any; and they were therefore fed, watched, and cleaned with the utmost care. No perceptible difference in the size or healthiness of the worms, from the first hatching to the last, and not a bad or imperfect cocoon among them. Those hatched on the 4th of March spun on the 22d of April, and those hatched on the 24th of April spun on the 22d of May. During the last age the worms were fed with leaves on the branches, the limbs at each feeding crossing the limbs laid on before; and the pile of brush thus formed made a very convenient place for spinning, with which the worms appeared content; and the cocoons thus made were equal to any formed in the other various conveniences recommended by writers on the subject, in which I had arranged different portions of the worms. The kind I reared was the Italian Gray, sulphur colored. The 1000 selected for seed weighed 5 lbs. 6 oz. avoirdupois. We succeeded in reeling the remaining cocoons, without difficulty, on the cotton reel, to which I had adapted fixtures for running two threads at a time, wrapped round each other, as in the reel of Piedmont, but without the traversing bar. This silk has since been manufactured into sewings of good quality, on the common wheel.

I cannot expect my method of hatching will be generally adopted, but I am not sure but it may be the best for ensuring a hardy breed of worms. At least I am encouraged to repeat the experiment this season. I am preparing to feed a million of worms this season, being plentifully supplied with multicaulis and white mulberry. This latter I find very convenient for alternating with the first, in feeding the leaves on the limbs, from the slender stems forming such a neat pile for the formation of cocoons.

I have satisfactorily tested your theory of calcareous soils being best adapted to grape vines. My crop of grapes of 1839 was bountiful, indeed,—fully ripened, full bunches, and without the sign of spot or mildew to be seen, on that part of the vineyard that had been marled. But a few vines, of equal thriftiness, and pruned and cultivated in all respects similarly, except not being marled, spotted and mildewed three-fourths of their grapes as usual. During that season, however, we were favored with abundance of rain, nearly 12 inches having fallen in the month of July. I deem this a matter of consequence in our climate, and will render it important to be prepared with the means for irrigation, should a drought render it necessary, during the perfecting of the fruit. The summer of 1840 was very different. Until the first of June my vines were as thrifty, as fully set with fruit, as clear of mildew, and every way as promising as they were the previous year; but during the month of June there fell but three-fourths of an inch of rain, in July but 2.3 inches, and in August but 1 inch. The leaves on the vines ripened and shed off, leaving the green bunches of fruit exposed naked to the sun. They wilted, dried, and fell, without ripening. It must be remarked, that the culture of the vine was a new thing with me, that I had never seen any but my own, and that these vines were but five years from the slips. It may be, that as the vines get older, and only the same extent of limbs being allowed to older roots, they may become better able to sustain a drought. But the benefit of irrigation to any growing crop, in a dry season, to which our climate is peculiarly liable, must be important.

N. D. SMITH.

For the Farmers' Register.

RANGE OF THE THERMOMETER, AND STATE OF THE WEATHER, AT WASHINGTON, ARK., THROUGH 1840. NOTED BY N. D. SMITH.

MONTH.	Extreme range of temperature.	Quantity of rain in inches.	Fair days.	Cloudy days.
January	13 to 60	7.5	14	17
Feb'ry.	10 to 76	14.5	12	17
March	31 to 75	3.5	17	14
April	44 to 80	12.62	7	23
May	46 to 85	5.63	22	9
June	56 to 92	.75	22	8
July	59 to 90	2.375	16	15
August	54 to 93	1.	23	8
Septem.	43 to 84	2.625	21	9
October	30 to 83	7.75	18	13
Novem.	18 to 72	3.75	22	8
Decem.	24 to 72	2.625	17	14

THE CLIMATE OF AMERICA.

From the Farmers' Cabinet.

Mr. Editor—The late Mr. George Walker, of Holmesburg, observed to a friend, that after eighteen years' residence in this country—during which he had never lost a turnip crop—he could not be induced to return to England to battle with the elements. His estimate of the value of an American climate to the grain and stock farmer was high indeed, the Indian summer affording ample opportunity to raise turnips to any extent, after full crops of grain had been carried and safely housed—an almost incalculable advantage; and I have often seen on his farm a heavy crop of turnips, after the same land had yielded a crop of the finest and brightest wheat, amounting to forty bushels per acre. Now if the value of two such crops be joined to the advantage of feeding stock on the turnips during winter, with the straw of the wheat crop as bedding for the stock, and an estimate of the whole be drawn, with no drawback in the shape of tithe, tax, or poor rate, and about half a dozen other "rates," his conviction, that his farming operations were conducted in this country 25 per cent. cheaper than in England, was no doubt well-founded.

I well remember seeing the last of the crops—horse beans—carried one year on the 24th day of December! and this, too, was in the Isle of Wight, the garden of England; while I myself have had a crop of oats covered by two feet of snow while lying in the field. And I have now before me a retrospect of the year 1836, Scotland, where it is said "the prevalence of cold, frosty, ungenial nights, during the months of May and June, endangered the vegetative powers of all growing grain; and then was predicted, what has since unfortunately been verified, a serious deficiency in the crops; the backwardness of the season and the retarded period of harvest having a most deteriorating influence on the quality as well as quantity of the grain, occasioned by the raw, wet and boisterous weather of the month of August, with chilling blasts from the east and northeast," leaving only the month of July for the season of ripening the grain! No wonder that the observation follows: "The wheat has proved coarse, thin, and irregular, having ripened irregularly, and been cut, in some instances, partly matured and partly green, having also been hurried from the field, by which its condition has been much impaired."

The contemplation of such a picture is calculated to do us good; and by it I think we shall be able to understand how it is possible that the management of a well-cultivated farm can be conducted at an expense 25 per cent. lower in this country than in Great Britain, leaving an immense amount of ease and comfort in favor of the American farmer. JOHN GREEN.

FERMENTED MANURE.

From the Farmers' Cabinet.

Mr. Editor:—I lay it down as an axiom, "that need not be controverted," 1st, That no animal or vegetable matter can, properly speaking, operate as *manure* to vegetable life, until after fermentation. 2d. That no animal or vegetable substance can, with impunity, be taken into circulation by living plants after putrid fermentation has taken place. To its destructive properties is to be attributed the death of the orchard of cherry-trees in Kent, as mentioned in a late number of the Cabinet,—the large quantity of stable manure which had been deposited in the trench, at a depth which prevented the escape of the deleterious gases on fermentation, became in consequence *putrid*; and when the roots of these trees had reached and penetrated this substance, and had taken up the poison into circulation, death was the immediate consequence.

I once carried abroad a large quantity of stable manure that had been long lying in a watery hole, until it had become quite putrid; and although it was spread as a top dressing on pasture land, but little benefit was ever known to arise from the application. A friend who keeps a large livery stable adjoining his land, dug a cistern to receive the drainage of his yard, in which there is always a large accumulation of manure, and kept a cart and cask to carry it abroad on his pasture and meadow land; but he found no benefit from it when it was allowed to remain in the cistern until putrid fermentation had taken place, and the liquid matter had begun to smell disgustingly, as he termed it. Another person, aware of the circumstance, has adopted a different mode to very great advantage: at the emptying of the cistern, he deposites in it a quantity of the finest mould he can obtain, and as soon as it is well saturated with the drainings of the yard, other mould is added periodically, until the cistern is full; it is then removed to some dry spot, and made into a neat heap, and after turning it up to induce a regular fermentation, it is carried as a top-dressing to his meadows, and especially on clover, in the spring, where the effect is absolutely incalculable.

Darby, April 16, 1841. P. G.

THE ROTATION OF OATS AND TOBACCO, BOTH PROFITABLE AND MELIORATING.

To the Editor of the Farmers' Register.

When we met last, I think, the general complaint of the failure of the crop of wheat in eastern and middle Virginia was the subject of our conversation. I had then but recently met several gentlemen of high agricultural reputation, who were anxious in their inquiries about the culture of tobacco, with which they had heretofore no acquaintance. In a brief and interrupted conversation there was little opportunity to explain fully a plan for the rearing of tobacco which I had before recommended in your Register, and which farther experience has convinced me is highly judicious, if not indispensably necessary, in the present state of our lands. With a view to benefit these gentlemen, I propose to recommend again this plan through the medium of your paper. The general opinion that our country, from the mountains to the seaboard, owes its devastation to the culture of tobacco, I shall not pretend to controvert, whilst I assert that the crop is, nevertheless, not particularly exhausting. The same system pursued in any new, wooded country, capa-

ble of producing a rich staple, and where labor is attainable, will produce the same results, whatever may be the crop. We witness this in the south-west, where cotton is made exclusively for sale; in Louisiana, where sugar is the crop; and in most of the West India islands. Even in Kentucky, so favorable to the grasses, there are not wanting instances to show how certainly even the best lands will be exhausted, without proper care and attention.

However this may be, it seems now a matter beyond a doubt, that we must make tobacco in a certain region of Virginia, or we must have no income. Wheat, (all agree,) cannot be relied upon. Our soil is too much exhausted, and the climate too arid, for grazing. For horticultural productions we have no market, and we are north of the cotton region. Tobacco *has* been a source of *annual* wealth in times past—is so now in a portion of the state, and, in my opinion, may be profitably cultivated again wherever it has been so in former days. Some one, curious on such subjects, has said, "that if you will draw a line through Raleigh in North Carolina, from the Atlantic to the Mississippi, and another parallel to it through Fredericksburg in Virginia, to the same river, you will include the best tobacco growing region." I believe that is true. It is certainly true that those lines include a country unfit (in general) for any other staple crop, (since the acknowledged failure of wheat,) and one where any improvement in the culture of tobacco, which will preserve the land and secure a good crop, ought to be most eagerly sought after. The plan I propose is so simple, that many will be deterred from trying it by that fact. It is to lay apart two lots of a size adequate to your force and other circumstances, and cultivate them alternately in oats and tobacco, rolling down the oats when *perfectly ripe* and leaving them on the land. A judicious manager will certainly make these lots rich to begin with, otherwise he can expect no crop of tobacco for a few years; for although, I believe, in a series of years land may be made rich by this system, even if originally poor, yet no one would be willing to give up two, three or more crops whilst it was becoming so. He will likewise select, (if possible,) land that lies well, to guard against the washing rains, and of course would choose low-lands not subject to inundation, if he had such. In addition to the decided annual improvement of land thus used, there are other advantages, any of which should induce every planter to try the plan. Your manure, withdrawn from your tobacco crop, may be applied to the improvement of the rest of the farm. The field on which oats is rolled down is put in finer tilth—better suited for tobacco to stand well, and grow off in, than by any process I have seen. Your fields are permanent, and therefore your tobacco houses may be made so, instead of being scattered all about the plantation wherever you may chance to make a little tobacco; and, lastly, there is less labor in the cultivation than on common lots or new land. Some tobacco growers believe they receive but small compensation for their labors unless they make a pound for every three plants. This is certainly a very good crop; but I have known it made more than once, and by one gentleman very commonly. The system of alternating oats and tobacco will insure this product in any year, (if your lots be well selected,) after a few crops of oats have been rolled down. Every man at all versed in the cultivation of the earth will readily perceive that ploughing in the oats and sowing peas would probably hasten the fertilization of the lot. I have not tried it, because at the season when oats are ripe we generally are pushed for time—and rolling down has answered a good purpose, and is quickly done. I had intended to add a few words describing the mode of cultivating tobacco most approved about here; but, perceiving the last numbers of your Register to contain two essays on that subject, the one from Maryland, the other from Kentucky—both of which are obviously unsuited to us, I will not doubt that some one much better qualified than myself will at least adapt the above essays to our country and climate. You will understand that I am not vain enough to pretend to instruct veteran tobacco growers. My object is to aid some few especial acquaintances who are just about to commence the culture of this plant, and with whom I have already had some conversation.

H. M.

[We are gratified to meet again, as a contributor to the Farmers' Register, after a long interval of silence, our personal acquaintance and friend, the writer of the above communication. As interesting as it is, and valuable for the novelty, (to most persons,) and simplicity and cheapness of the mode of improvement which it recommends, it would have been more useful, and had more weight, if, instead of being anonymous, it had been signed by the name of the writer. We should also have been pleased, and so would hundreds of those who will be readers of the communication, if he had been more full in statements of experienced results of the plan of culture proposed. We trust he will continue, and enlarge upon this interesting subject hereafter. In the mean time, we will copy below a paragraph from the Farmers' Register, vol. 1 (p. 441,) which was referred to above, and which has not been seen by much the greater number of our present subscribers.—Ed. F. R.]

"Mr. William Old, of Powhatan, has, for the last ten or twelve years, made as large crops of tobacco, (I mean for the quantity cultivated,) as any man in the state,—never or very rarely less than 1000 lbs. to the acre—sometimes a great deal more; and this too always commanding a high (relative) price. He has two lots for tobacco, one of which is planted every year, followed the next spring with oats, which, when ripe, are rolled down, or turned under with the plough, as he thinks best. This crop of oats not only supplies as much fertility as the tobacco may have exhausted, but the lots are becoming richer every year. On these lots he uses no manure; that is reserved for his corn and wheat. The cost of the seed oats is about fifty cents the acre. The labor of sowing and afterwards rolling down is very trifling—not equal to the expense of carting the manure on the lot if it was given to him. What I would principally call your attention to is the fact:—That the general character of his farm has

been more improved in the last ten years (whether you regard its appearance or its product,) than any other farm, save my friend Wm. Finney's, within my knowledge—during the whole of which time he has cultivated tobacco successfully. Nor are there any peculiar circumstances of a favorable character which apply to his farm and situation, more than to others. On the contrary, his predecessors were literally unable to support their families on the farm which he has thus improved. These are the facts on which I rely to prove the position, viz.: That the culture of tobacco is not incompatible with the improvement of the land; and I think they will be allowed fully to sustain it by all who will take the trouble to inspect Mr. Old's estate."

SWEET-SCENTED VERNAL GRASS ON POOR LAND. PROTECTION OF BUZZARDS.

To the Editor of the Farmers' Register.

May 15th, 1841.

Dear sir:—It is too well known to all who live between our tide-water rivers, that we have a most distressing superabundance of very poor, thin, light land, incapable of producing any thing but broom-straw, hen-grass and sheep-sorrel; in a word—to borrow a common phrase—"land that was born poor." None will cultivate it so long as they have any thing which is even a shade better. The consequence is, that it is left uninclosed, and becomes a common for every body's stock, *not to fill their bellies on*, but to take a most wearisome march over in anxious search of a bite or two of some worthless weeds, growing slowly here and there, so far apart, like the stalks of much of our wheat, that, as I once heard a shrewd Yankee say, they are not near enough to be neighbors.

Now even to such land I believe I have accidentally ascertained that the sweet-scented vernal grass is well adapted. My reasons for thinking so are, that a few seeds of this grass, as I suppose, were carelessly thrown out of a box about two years ago, on a spot of ground near my house; and last year I discovered, to my great surprise, several bunches of it growing on another spot distant from the first a hundred yards or more, within the same inclosure. This land is very poor, thin and light; and I am quite sure would not produce a bushel and a half of corn to the acre. It has not been cultivated for two or three years, yet the sweet-scented vernal grass is spreading over it very fast, and even mixing to a considerable extent with other grasses which grow in adjacent and much better land. It is now in full bloom, and generally, as I have ascertained by actual measurement, full eighteen inches high, although in such poverty-stricken soil. It has a fibrous root, consisting of very numerous fine filaments, which take such strong hold of the land as to induce a belief that it would bear being grazed full as well as any grass yet known to us. This circumstance, added to its being the earliest of any of our cultivated grasses, and growing to the height above stated—where no other grass will scarcely grow at all, as well as furnishing herbage of which both horses and cattle appear very fond, recommends it, I think, strongly to our notice.

If the opinion I have formed of it be correct, the owners of all such land as I have described, should lose no time in sowing it on them, for they would then soon have some good early grazing for their stock, where those poor, half-starved creatures now get nothing in the spring of the year, or barely enough to eke out a miserable existence; often at this season having scarcely sufficient flesh on their bones to furnish a meal for half a dozen hungry buzzards, which are not unfrequently seen, at such times, hovering over them, as much as to say to each other, (if birds could talk in these days,) "is it not near *our* time to take a snack of them?"

By the way, I have heard that in South Carolina there is a law which imposes a penalty of some 15 or 20 dollars on any one who kills one of these very useful scavengers. Although this argurs well for their humanity to their buzzards, which I am told are nearly as tame as our turkeys, it has an awful squinting at something very different from humanity towards their poor helpless cattle, sheep and hogs. Still it shows a better spirit than prevails in some parts of our own state. For *we* not only often suffer these wretched animals to perish for want of food, but to die and rot even along our highways, and will not so much as encourage the breed of buzzards, to get rid of the nuisance without any trouble or cost to ourselves. *Quære*, might not our enlightened and beneficent legislature, which is always so profuse in professions of devotion to the great interest of agriculture, be tempted, in the exuberance of their zeal, to pass, if we would only petition them, just such a law as that of South Carolina for the protection of buzzards? A powerful recommendation of such a law would be, that it could not possibly cause the loss of an atom of popularity to those who passed it, as it would not take a single cent out of the treasury, and might bring something into it by way of fines. Those, I would respectfully propose, should be fixed at $20 for every buzzard killed or crippled, which, considering the present state of our currency, would not be deemed too much. I would further propose—with all due deference to our legislative guardians—that the sum, which those fines would soon produce should be entitled "*The Buzzard Fund*;" and moreover, that it should be exclusively appropriated to pay the members of the Board of Agriculture, which our last assembly of law-makers so patriotically and generously established to serve *without* pay, and all "for honor and glory," just as if they themselves—every man of them—were perfectly willing to do the same, and doubted not for a moment, that eight competent gentlemen could be found any where to discharge the many arduous duties which the law imposes upon this board, and pay their own expenses besides.

But be this as it may, I hope our brother farmers and planters will meditate seriously upon these matters before the meeting of our next legislature, and act accordingly. I remain, dear sir, yours very sincerely,

JAMES M. GARNETT.

ERRATUM.

In the "Essay on Calcareous Earth," &c. published in the April number, there occurred an

unlucky error, by the transposition of the 12th, 13th and 14th lines, (as they there stand,) 2d col. p. 205. The order of these three lines, numbered as they now stand, should have been, after the 11th line, (and may be so corrected by placing the numbers opposite to them in the margin,) 13, 14, 12, when they will read thus:

"will amount to 612½ lbs.; and as lime can be "brought to us at 75 cts. per hundred pounds, 612½ "lbs. will cost $4.59 the acre. I am not," &c.

This, and all similar errors of transposition, are made in the *final* correction, when, in correcting a single word in a line, two or three lines of types are taken out, and then, by carelessness, returned to a wrong place. The small error which had been marked, is found by the reviser of the press to have been properly corrected; but the much more important and newly-made error of transposition of two adjacent lines thereby caused, may sometimes escape the notice of the most careful reviser.

COST AND RECEIPTS OF ALL THE PUBLIC WORKS OF PENNSYLVANIA.

From the Philadelphia National Gazette.

When a man's living exceeds his income, he is generally considered in the high road to beggary. A community from like causes must experience like effects. The State of Pennsylvania is on the high road to beggary. Or, what is worse, she has been spending more than her earnings, and has begged until her story has become stale, and no sensible person will give her a sous. The precious truth is just revealed, that all the public works of the state yield a less aggregate sum per annum under this present administration, than is required to use them and keep them in repair. In homely phrase, they cost more than they come to by about half a million of dollars a year. * * * * *

Eastern Division Pennsylvania Canal.		
Total cost,	$1,734,658 61	
Total revenue,		1,047,826 08
Total expenditures,		422, 805 20
Juniata Division.		
Total cost,	3,437,334 99	
Total revenue,		491,104 91
Total expenditures,		592,180 49
Western Division.		
Total cost,	2,964 882 67	
Total revenue,		887,018 65
Total expenditures,		889,834 46
Delaware Division.		
Total cost,	1,374,774 42	
Total revenue,		586,515 01
Total expenditures,		638,381 11
Susquehanna Division.		
Total cost,	867,874 37	
Total revenue,		141,730 05
Total expenditures,		314,253 69
North Branch Division.		
Total cost,	1,491,894 67	
Total revenue,		63.559 03
Total expenditures,		390,624 11
Western Branch Division		
Total cost,	1,708,579 82	
Total revenue,		60.859 95
Total expenditures,		333,738 36
French Creek Division and Feeder.		
Total cost (est'd.)	784,750 61	
Total revenue,		4.767 42
Total expenditures,		133,979 26
Beaver Division.		
Total cost (est'd.)	522,258 98	
Total revenue,		10.924 02
Total expenditures,		139,082 21
Columbia and Philadelphia Railway.		
Total cost, 3,983,302 05		
Total rev.—tolls	1,205, 419 91	
Motive power,	824,919 79	
		2,030,339 70
Total expend's—toll	585.343 88	
Motive power,	862.074 76	
Locomotive's ropes,	436,519 51	
		1,883,998 15
Allegheny Portage Railroad.		
Total cost, 1,783,176 45		
Total rev.—tolls,	413.504 71	
Motive power,	443,480 29	
		856,985 00
Total expend's—tolls	293.135 40	
Motive power,	539 507 44	
Locom's ropes, &c.	122.266 92	
		954.879 76
Total cost of all finished lines,		20 658.791 64
Total revenue,		6.181.624 81
Total expenditure,		6,694,206 80

A glance at this table shows that not only do the public works afford no means of paying an interest upon the original outlay, or of providing as they should for a sinking fund to pay off that outlay, but that the daily use of them greatly exceeds in cost the daily income.

NEW AFRICAN FRUIT.

From the Year-Book of Facts.

Sir James Alexander, during his recent expedition in Africa, saw the *naras* growing on little knolls of sand; the bushes being four or five feet high, without leaves, with thorns on the light and dark green striped branches. The fruit has a coriaceous rind, rough with prickles. is twice the size of an orange, or fifteen or eighteen inches in circumference, and its seed and pulp resemble those of a melon. When unripe it burns the tongue and palate exceedingly, but when ripe it has a luscious, subacid taste. Sir James brought home some seeds of this fruit; from which plants were growing in March last: they were then a foot high, and beginning to branch, having two thorns at each articulation, and a stipule scarcely to be called a leaf between them, on the axis of which was the bud, but no leaves.

CULTURE OF TEA IN EUROPE.

From the same.

In a letter from the Abbé Voisin to M. Stanislas Julien is a statement, which proves that the tea-tree may be cultivated in our northern climates. The former has resided twelve years in China, near the frontiers of Thibet, in which country all the species of tea are successfully cultivated; although the degree of cold there much exceeds that of our winters, and the snow never melts before the end of April. Twenty-four treatises concerning tea have been composed in China, from the seventh century to the present time, and which contain all the requisite instructions for the culture and preparation of the plant.—*Athenæum.*

(Of the practicability of the growth of tea in Europe there has long been no doubt; indeed, the experiment has been made with success in Wales. The only doubt lies in the secret of its preparation.—*Ed.*)

In no country of Europe is tea imported in such perfection as in Russia. Conveyed by land through the medium of the large fairs at Ladak and Nijin Novgorod, it retains the virtue of which a sea-voyage is said to deprive it; while its flavor is much enhanced by the leaves of the *olea fragrans*, with which the Chinese pack it for a land journey.—*Elliott's Travels.*

EGYPTIAN COTTON CULTIVATED IN MISSISSIPPI.

To the Editor of the Farmers' Register.

Some time since I promised to give you the results of some experiments, I was then making with the Egyptian cotton. I was induced to make this promise from the fact of the appearance in your Register, in November 1838, of some premature remarks upon this subject, extracted from the Rodney Telegraph, calculated to produce, I much feared, in the minds of your readers, erroneous opinions respecting this cotton. I was absent from home at the time this was written, and Dr. New was urged to do it by the earnest solicitations of the editors of our village paper. I regretted this publication in your Register the more, in consequence of the fear of being charged with attempting to impose another humbug upon the community, and this being but to herald its fame prior to entering the *seed* into market. Let me assure you, sir, there is scarcely any thing I so much detest, and I hope it may not appear superfluous for me here to add, that I have never sold a single seed of it, and that I have never refused giving them to all who have desired to attempt the same results I had in view myself, that is, to improve, or at least to revive, the former character of our Mexican cotton. How far I have succeeded in this design is my present object to explain, and to do this it will be necessary to go back to the first year this cotton was introduced upon this place, in order to trace its changes from its original character to its present mixed varieties.

Whilst my father, Dr. Rush Nutt, was making a tour in the East during the year 1834, he procured among other things a handful of cotton seed in Egypt; of these there were two kinds, a small white seed, and smooth black seed. These black seed he represented as having been introduced into Egypt from our Sea Island. That the stalks from these seed in Egypt only grew three or four feet high; in this particular, and in this only, differing from the character it assumes in our Sea Islands. This change he ascribed to its being cultivated for a succession of years in the extremely dry climate of Egypt.

In the spring of 1836 I planted these seed; from them succeeded in getting only *one stalk* of the black seed to grow, the white having rotted in the ground; the latter was also the fate with some others with whom my father had shared the seed. Being in a very rich bottom, this single stalk of the black seed grew about six feet high, with large heavy branches. It was late in blooming, and in September it was covered with young bolls and *squares*, but among the whole not more than half a dozen matured. The bolls were small, and contained only three chambers, the same as in Egypt, the cotton presented its usual richness of color, and the same length and beauty of staple or *fibre*.

The following spring I planted the seed from this stock upon the hills, supposing it would here come to maturity earlier, and contiguous to our Mexican cotton, in order to see if by approximation it would derive any improvement or new properties from the Mexican. I first observed a great variety in the size of the stalks from these seed, and then in the size of the bolls. Some two or three of the stalks grew as high as 10 or 12 feet, bearing much larger bolls, but fewer in number, than the preceding year, and a few only of these bolls contained four compartments or chambers. These stalks produced much the most beautiful cotton of the whole. The remainder, the greater part of the stalks, did not grow more than three and four feet in the same soil, bolls and squares were more numerous, but small. I could not account for this difference in any other manner than by supposing that the blossoms of these large plants had received some of the farina from the blossoms of the contiguous Mexican cotton, which amalgamation of fructifying principles had invigorated the plant and caused the product to assume somewhat more of the Mexican character. How this change of *product* might have taken place I can readily conceive, but by what law of vegetable physiology it caused the plant itself to spring up so much higher. I am at a loss to say, particularly as this growth had generally taken place before it bloomed; and I must leave it to wiser heads than mine to offer an explanation of this phenomenon of nature.

These seeds were carefully saved, and the next spring, that of 1838, I planted from them about an acre of ground, again in the hills. This season I marked no changes from that of the last. Some few stalks grew, as before, very tall, with fewer and larger bolls, whilst the greater part were small, with small bolls, and a great many squares that never came to maturity.

These seeds were also saved; and now having a sufficient quantity to venture experiments in another form, and being pretty well satisfied that we could never succeed in making it a valuable plant in its original unmixed state, I determined in the spring of 1839 to plant the seed with the Mexican, a row of each alternately. This was

cultivated carefully and closely observed during the whole year. You must bear in mind that the season proved to be an exceedingly dry one, and in every respect one of the most propitious ones for every description of the cotton plant that we have ever known. I believe there was nothing particularly to be marked in its growth until September, except the great variety in the size of the stalk. We observed, however, that it suffered less from the drought in May, June and July than our Mexican generally did; always looked more fresh and green, continued to grow, and lost but few of its squares, whilst the rest of our crop lost a great many. These remarks will apply to the Mexican rows as well as the Egyptian. I might here state also that the Egyptian cotton, since we first planted it, has always appeared to be less easily injured by frost. These advantages it no doubt partially derived from its becoming a more hardy plant in the dry atmosphere of Egypt, and perhaps also from being invigorated from amalgamation with another variety, that of the Mexican. Cotton generally was much more forward that season than usual; and we commenced picking as early as the 25th of July. The Egyptian cotton, usually so backward, was almost as early in maturing its bolls, but principally such stalks as appeared to be unchanged by mixing with the Mexican. The rest however was also comparatively early. And now, sir, were exhibited most of the interesting phenomena which I have to relate respecting our Egyptian cotton. As before mentioned, some few stalks sprung up to a considerable height, produced but few bolls, some of them not even a single *form* or *bloom*. The cotton from these stalks was a most beautiful article, *soft*, *fine* and *silky*; *fibre* very *long* and *strong*; but not so rich a cream color as the original Egyptian; invariably contained a *large green seed*. Other stalks did not grow so large, but had more branches; bore many more bolls, produced a long strong fibre, but not so silky; contained almost *every variety of seed;* upon some we found the original *smooth black seed*, upon others, seed a little *fuzzy*. Others again with a small brown seed, and some with a white seed. Many of the blossoms too changed from the Egyptian buff color to the Mexican white. Some of these stalks produced remarkably well, but I cannot say positively which variety of seed produced the most; but this was very certain, that the green seed yielded the smallest quantity, and produced decidedly the most lovely cotton, resembling in every respect in seed and cotton the *Chinese silk cotton*, which has latterly attracted so much attention in this section of country, and which I am inclined to think will prove the same. Think not that the difference in the height of this green seed cotton was owing to a difference in soil; it was all the same; and generally we would find one single stalk of this 8 or 10 feet high, with others on each side only three feet. The foregoing remarks apply principally to the cotton grown from the Egyptian rows; and which I have termed the Mexico-Egyptian cotton. That in the other alternate rows I have designated, in contradistinction, Egyptio-Mexican. Let us now turn to this: although perhaps it did not present so many interesting points to the naturalist, yet it offered more pleasing prospects to the planter. In this we observed an evident and *decided general improvement*, both as respects the *life* and *vigor* of the plant, the *quality* of the cotton, and the *quantity* yielded. The bolls grew larger, the fibre somewhat larger, and much stronger. Nor was the plant so liable to disease, *consequently less attacked by worms and insects*. It grew rapidly and matured early, and, in fine, gratified my highest expectations.

These seeds were carefully saved, that is, of the Egyptio-Mexican, and the next season, in the spring of 1840, I planted from them about twenty acres, which yielded much better than any other part of the plantation, although the soil was rather inferior to some of the rest. The cotton too was so much superior that each bale was selected from our other cotton in New Orleans, and classed at a higher rate. I am so well satisfied of the superiority of the cross, that I have this season planted nearly the whole of my crop with it, and would have planted the whole had I had the seed. I have also planted in such a manner as to produce a little greater mixture of the two cottons, and may, perhaps, at some other time, give you the result of further experience upon this as well as other varieties of the cotton plant, some of which I have already tried without any good results. This is a subject of deep interest to our southern country; and I wish you could draw forth for the public good the experience of many of our practical and intelligent planters, induce them to take a pride in the matter, as the Kentuckian does with his stock, and the Virginian with agriculture in general. I have perused with much pleasure the remarks of Gov. McDuffie, of South Carolina, contained in the February number of your Register, upon this subject, and subscribe to them most heartily. There is no doubt his advice, if followed by all, would prove of incalculable benefit to the cotton-growing region; adopt a system of general improvement; improve our cotton plant, by crosses, and by such a system of cultivation and manuring of lands as will have the effect of producing a healthy stand of growing plants; gather our crop cleanly, and send it to market in a better condition; make less of it, and thereby enhance its value; attend to other products and improvements, and we would soon find ourselves richly repaid. I can give my testimony to this. We have pursued this course for many years; it always having been the ruling principle with my father whilst living, to do nothing except what he did well; consequently our crop is always sought for, its brand being well known among the manufacturers; and it never fails to bring two cents more per pound than other cottons. There are also one or two other brands that go to New Orleans, that command generally as good a price, and attributable to the same cause. We do not make as much per hand in bales; but as much in the proceeds after our sales. Our planters themselves should become interested, and no longer trust so entirely to overseers, an irresponsible and uninterested class, whose sole object is either to lounge about in indolence and cheat their employers, or in making as many cotton bales as possible, at the expense of almost every thing else.

I have above alluded to the *Chinese silk cotton*, as it is termed, and expressed a doubt of its being any thing more than the green seed variety of the Mexico-Egyptian cotton, although it is represent-

ed as a very different article in one important respect, the quantity of its yield. My suspicions may be wrong; but such, I think, will prove to be the case. It is said, by those who grew it last season, that it produces about three times as much per acre as the Mexican. It is this property of it which I am disposed to doubt, and upon this ground, that I believe, as a general rule, we will find it to be the case, that, in proportion as we find cotton possessing a long, fine and silky fibre, in an equal proportion will it be found to decrease in the quantity produced; and I think, upon an investigation of the matter, this will be found one of the characteristics of the cotton plant: that those varieties of cotton which are shortest in fibre will yield most abundantly, and the reverse. I admit, however, this may in some measure be varied, by a judicious system in crossing different varieties, and of cultivation. We all know that cultivation does a great deal towards changing and improving natural properties of vegetation in general; but I cannot believe that such cotton as I have seen exhibited as the Chinese silk cotton can ever be grown in such quantities per acre as our Mexican. I shall, however, be able to test the matter this year, having some of it now growing in our garden.

I have also made some experiments with the *twin* or *Okra cotton*, but abandoned it, as inferior to our Mexican in almost every respect; but the most serious objection was, that it appeared to open all at once, and wasted a great deal before we could be able to pick it; that is, if we had planted it as a crop. This is owing to its having so few and so short branches. All the bolls grew at one time, and opened together. It also grows tall, and the bolls at the top bend it over to the ground.

I intended explaining more fully my views upon the general system of saving a crop and serving it up for market; to account for our cotton being better in color, fibre, &c., and clearer of trash and *waste cotton*, in cotton the fibre of which is cut by the saws in ginning, than the most of cotton which goes to New Orleans; and also to hint at some other points in the line of our planters; such as manuring our soils, to prevent the threatened exhaustion of our once highly esteemed Gulf Hills, &c.; but fear I have already extended my remarks to too great a length—I am sure much more than I designed doing when I commenced. But I shall now close, at least until I learn the fate of this, which I leave entirely to yourself. I assure you, sir, it is with very great reluctance I send you these remarks, and would feel more than recompensed if they would but serve to call more attention to the subject; and to elicit other contributions from this section of country to your valuable publication. Respectfully yours,

HALLER NUTT.

Laurel Hill, Jefferson County, Mi.
April 25, 1841.

[We shall be glad to hear again from our correspondent, on this or any other subject.—ED.]

MONTHLY COMMERCIAL REPORT.

For the Farmers' Register.

The most interesting circumstance which has occurred for some time in the commercial world, is the recent movement on the part of the British ministry for an amelioration of the corn laws—a subject which has long agitated the kingdom, and been the bone of contention between the aristocracy and the working classes. That it should now be introduced by the ministerial party is a proof of the increasing strength and influence of the manufacturing and laboring portion of the community. It is proposed that a regular and moderate duty shall be laid on grain, in place of the fluctuating one, which has rendered the trade so precarious, and caused the price of bread to be higher in England than in any other country. The agricultural and commercial interests of the United States will be greatly benefited by the change; and it is evidently the interest of Great Britain to obtain supplies from this country, which affords so large and increasing a market for her manufactures, in preference to procuring them from the continent of Europe, where she has generally to pay for them in gold and silver.

It is proposed to admit other articles of necessity on more liberal terms than heretofore, and we may hope that this is but the commencement of a system which may remove the shackles from commerce, not only in Great Britain, but universally; confining the operations of tariffs solely to objects of revenue, and allowing a free intercourse between all countries in all commodities. Our own country will not, we trust, be backward in promoting so desirable an object, both by negotiation and by legislation.

There has been scarcely any variation in the prices of the most important articles of foreign or domestic produce during the month. Cotton and tobacco maintain the prices last quoted; but the late accounts from Europe are unfavorable to both articles. The manufacturing interest there, as well as in this country, is much depressed; and the cotton spinners in England are working but four days in the week. At this rate, the deficiency of our last crop will not be felt, and prices must keep down for some time at least.

Shipments of flour will no doubt be made in anticipation of the change above mentioned, and a slight advance in this article has already taken place.

The necessaries of life were never lower than they have been here of late. Flour at $4.50 to $4.75; corn at 45 cents, (now 55 cents); bacon at 5 to 8 cents.

The meeting of Congress (next week) is looked forward to for some important changes affecting the currency and commerce of the country.

X.

May 25th, 1841.

THE SEASON AND CROPS.

May 25th.

Throughout the spring, to the 20th of this month, in lower Virginia there has been a very unusual predominance of cold weather; and from Christmas to the same time, the quantity and frequency of rains have been not only remarkable, but unprecedented. Not only was there much time lost to all out-door farm labors, but the earth was scarcely ever dry enough to

be ploughed, even when the weather was good. All ploughing was very late; and the planting of many a crop of corn was not commenced until after the whole field is usually finished; and those persons who planted earlier fared worse, by the rotting of the seed, or by the spare and feeble growth of plants. We had begun to fear that no other than very bad crops, of every kind, could be possibly made. However, since the 20th, the weather has become oppressively warm, and dry, and has been relieved only by one welcome and heavy, but yet insufficient rain. The wheat had even before that time greatly improved, and now promises to bring a fair crop, where there has been no peculiar disaster and destruction: and corn has so much improved within a few days, that an average crop is no longer very improbable, if there should be a continuation of favorable weather. The chance for cotton near the northern limit of its culture is still worse than for corn. There were scarcely any oats sown, as but very little land was dry enough to plough or harrow, during all the time in which that grain could be advantageously sown.

We are informed that the wheat crop in the Valley of Virginia was unusually good, up to a recent time.—Ed. F. R.

HOW TO ERADICATE THE BRAMBLE.

From the Western Farmer and Gardener.

I observe that a correspondent in your last number inquires how the blackberry bush may be destroyed. As I have encountered and eradicated some formidable patches, which existed on the lands which I have at different times added to my farm, I think I may venture to recommend to your correspondent an infallible prescription. Some time in the winter or spring cut them close to the ground, and repeat the operation the last of July. A few will appear the second year, be sure to cut them also the last of May, and the last of July. This *specific* is based upon the scientific principle, *that no tree, shrub or plant can long maintain the life of the root without the aid of the top.* The leaves, &c., are as indispensable to the long life of a vegetable, as lungs are to an animal.

The same plan will destroy the iron weed or devil-bit, which so much infests the blue grass pastures of Kentucky, and which some farmers have vainly endeavored to eradicate by cutting once a year for 30 years in succession. Such pests are not to be exterminated by cutting in the blossom, *or in the moon*, but by the dint of scratched hands and sweated faces. You may have remarked the freedom of my farm from them, though a scattered one here and there shows the propensity of the soil to produce them, and that my predecessors were *industrious enough to raise their own blackberries.* Yours, truly,

Robt. W. Scott.

Franklin County, Ky., March 20, 1841.

SUMMARY OF NEWS.

Saturday May 1st, 1841.

There have been already exhibited several and strong evidences of an intention, by some of the most deeply involved states of this confederacy, to deny the validity of, and to refuse to pay their public debts, contracted within the last few years. Some time ago, Gov. McNutt boldly recommended this course to the legislature of Mississippi, (upon the ground of alleged fraud in the transaction,) in regard to the state bonds furnished to establish the great (swindling) Union Bank of that state. Since, the citizens of Bond county, Illinois, have held a public meeting, and resolved and published their determination not to consent to pay the bonds of that state. The Philadelphia Ledger says, "a similar meeting was held by the citizens of Montgomery county, Illinois, on the 13th inst. A committee was appointed, which reported in full upon the subject, and, fixing the aggregate debt at $13,000,000, say this debt, divided among the individuals of the state, would be over $30 per head for every man, woman and child in the state."—"With these growing public demonstrations of resistance of payment, and the reluctance manifested by legislatures to resort to taxation to pay state debts, we should not wonder to see them as greatly depressed as they are, nor evince surprise if they should go even lower. Our corrupt and swindling banking system has largely contributed thus to taint the public morals and to induce men to calmly look at this reckless violation of faith. Let those who aided in building it up and in maintaining it, now look upon the legitimate fruits of their labors, and learn to be wise."—These results are deplorable proofs of the rapid inroads that fraudulent banking, and its necessary accompaniment, fraudulent stock-jobbing, have already made upon the morals and moral sense both of states and individuals. But no matter how fraudulently these obligations of debt were obtained, or the money expended, (provided they are truly *debts of the state,*) nothing can justify a violation of public faith, as is proposed. It is to be feared that the pernicious example will spread.

A public meeting of merchants of New York, called for the purpose, have resolved to petition congress to establish a national bank. The advocates of a national bank, throughout the union, are numerous, and confident of success in obtaining a charter at the approaching extra session of congress. The measure is now for the first time acknowledged and insisted on as a *party measure*; and fifty avowed and open advocates for it can now be found as easily as *one* could have been found last summer. The conflict on this great question will be violent, and the issue all-important. Within the next nine months will be decided either the continued and more complete separation of bank and state, or a newly formed intimate union of them, indissoluble and for ever.

Many of the most able and influential of the southern men who will now support a national bank, are among those who have for many years loudly asserted the unconstitutionality of any such establishment. How can these new converts condemn any extent of constitutional means of prevention against the measure which may be exerted by those who *continue* o deem the bank unconstitutional?

"The Governor of Cuba has commenced a war against gamblers, and intends to drive them out of the island."

"The brig Troubadour, under Spanish colors, reported as belonging to Rosaline Kitan, of Bissau, (Africa,) with 289 slaves on board, from the coast, bound to Berbice, was wrecked about the 6th of Feb., on the Cayeas Islands. All on board were saved, and arrived at Nassau—the vessel totally lost. The cap-

tain and crew took passage in a Spanish brig bound to Havana, then lying in port. The negroes were taken possession of by the authorities of the island."

The Great Western steam-ship arrived at New York, on the 24th, bringing English accounts to the 8th. No public news of importance.

The President steam-ship, from New-York, had not arrived in England, nor been heard of; and so great was the fear that it had been lost, that insurance had been effected, and that too some days before the sailing of the Great Western, as high as 25 per cent. premium.

The grand jury have found a true bill against Madame Restell, the advertising abortion-producer, for manslaughter. She awaits her trial in jail.

Drake, the murderer of a whole family in Southampton, Virginia, has been condemned to death.

It is understood that the Florida war has been renewed by the savages, and that the plan of purchasing their consent to emigrate, for the greater number, has failed.

The swindling member of congress, Mitchell, had put his pursuers on a false scent, and gone to Canada, He was arrrested in Montreal, but, like most other of the aristocratic class of swindlers, was discharged because of want of power in the law to punish.

The Church Record, (edited by Dr Hawks,) in stating and commenting on some of the "business operations" of Mr. Biddle, (former president,) Mr. Cowperthwaite (late cashier) and other main conductors of the United States Bank, makes the following true and well applied remarks:

"The all-absorbing topic in our community, for some days past, has been the appalling disclosures of the long smothered misdoings in the administration of the Bank of the United States. Deplorable as these violations of trust must be, in their effects, upon the numerous individuals who are pecuniary sufferers from them—upon our national character, for honor, and probity in business transactions, upon our credit throughout the commercial world—and upon the confidence of our own people in like institutions; they are infinitely more deplorable in the proofs they furnish, of want of principle, and a deadened moral sense among us, in relation to all such matters. If the statements in the report of the stockholders' committee are substantially correct, many of the charges against the officers of the bank are not to be considered as mere abuses of trust; they are criminal offences; which, in any other country but ours, would have subjected them to indictment for fraud."—"Who can reflect upon such conduct in men, holding the most important trusts connected with the business interests of this great commercial country, and enjoying the unlimited confidence of the public, without the deepest sorrow and humility, and the gloomiest fears. Does it not prove, that we have brought down our standard of moral integrity to the lowest point—that we have discarded the restraints of honesty, from our dealings with our fellow men, and the obligations of Christianity, from our codes of duty?"

A batch of successful frauds, by means of forged drafts, apparently from the Commercial Bank of New Orleans, have been lately perpetrated in rapid succession upon three or four different banks, to the amount of about $70,000, much the greater part of which the drawer has secured and decamped with. Precisely similar operations were attempted, simultaneously, upon four or five other banks, for very large amounts, which barely failed of being as successful as the others. The *nomme de guerre* under which this operator first appeared was W. M. Parker, of London, with an *alias* for every other different draft. Unless, indeed, his letters of credit, or drafts, were really written in the Commercial Bank of New Orleans, by a coadjutor in high office and enjoying perfect confidence, the forgeries are so perfect as to seem almost miraculous. We expect to hear, in a day or two, that some officer of that bank, of the highest respectability, is on his way to Texas. At any rate, whether so aided or not, this Mr. Parker is certainly the Napoleon of swindlers, (at least of those so called,) and one of the most able, artful, and bold and *cool* operators, by means of banking facilities, who has ever exhibited skill in financiering. What a lamentable misdirection and waste of great talent! The proper sphere of action for this man would have been the office of president, and ruling spirit, of some great bank. In such a commanding position, he would have had ample scope to exercise his great talents and strong propensities, for the benefit of the bank, and of himself also; and general applause, and high reputation, might have been his meed, instead of his character now acquired, and hazards incurred.

A statement of the condition of the Farmers' Bank of Virginia, (including all its branches,) which is manifestly '*official*,' appeared in two of the Richmond papers of the 30th. It says that "the profits of the bank amount to a sum equal, within a small fraction, to 10 per cent of the entire capital." This report is up to April 1, and we presume is for the 12 months preceding. Now, instead of the bank authorities thus boastingly exhibiting these large profits, made during a time of continued suspension of payments, they ought to be *ashamed* of them, as being the measure of unjust gain, made at the expense of, and by defrauding the holders of their notes, and other creditors. During all this time, and now, because of the refusal to pay them, the notes of this bank have been depreciated 4 to 5 per cent. Now if as much of the bank capital as yielded 4 of the 10 per cent. of profits, (or the excess above the legal interest, and the full, usual and fair profit of money capital,) had been used by the bank to buy specie, with which to pay its notes, and maintain specie payments, instead of reaping a profit from the discredit and depreciation of their notes, then the present statement would, it is true, have shown only 6 per cent. of profit; but it would also have shown a sense of honesty, moral and legal obligation, and of responsibility, and the proper results of all these, of which their actual statement "of 10 per cent. profits," shows a total deficiency. But what bank, if permitted, and backed by the government, will not continue to refuse to pay specie, and thus to violate faith, truth, and honesty, to any extent, to gain even so little as 4 per cent. of additional profit?

Saturday, May 8, 1841.

The banking house of the Branch Exchange Bank in Richmond, now in the course of construction, will be a splendid and beautiful edifice—and will remain one of the most durable and striking monuments of the sway of our plundering and prodigal banking system, long after the consummation of its approaching prostration and destruction. And yet, if looking not to the beauty, but to the object and use of this building, there is seen a strange and even ludicrous want of fitness of means to ends. There will be seen massive granite columns of enormous size and strength, which will have almost *nothing* of weight to sustain, or of service to perform; and while the whole amount of specie belonging to this bank is only sixty-three thousand dollars, a stronghold is built to keep it safe that will cost more than half that amount; and a sumptuous palace, whose beauty is merely to please the eye of the public, is erected by a corporation which exists only by pillaging and defrauding that same public, and which would be bankrupt (the *old* and true term for *suspending payment*) *avowedly*, as well as really, if the bank were not guarded by the dishonesty of the laws from being compelled to comply with its just and honest obligations to its creditors.

The Governor of Pennsylvania has opposed his veto, for the third time this session, to another bill passed by the legislature for relieving the banks—that is, to authorize the banks of Pennsylvania, like those of Virginia, to act free from all penalty or responsibility for their violation of their obligations under law, justice, and honesty. Another bill was immediately prepared and passed the lower house. We trust that it will fare no better than its predecessors.

All the public works, in canals, railways and roads, of Pennsylvania, which cost the state forty millions of dollars, together yield less annual income, by about half a million of dollars, than the annual expenses. This is "internal improvement," with a vengeance!

The repairs of damages to the Savannah and Macon Railway, caused by the recent unprecedented freshets, have been rigorously prosecuted, and are nearly completed, and the whole 135 miles of before finished road will soon be in use.

A horrible crime has been recently committed in St. Louis, Mo. Two young gentlemen, Baker and Weaver, attached to and lodgers in the private bank

ing house of Mr. Pettus, were murdered in the night, by persons who had secreted themselves in the building, for the purpose of robbery, and the house then set fire to conceal the murders. The main object of the murderers failed, as they were unable to break into the fire-proof iron safe, or vault, which contained $200,000 worth of money and other valuable papers, and which were not injured by the fire, though the safe was exposed to a prodigious degree of heat. The villains have as yet escaped even suspicion. A reward of more than $5000 is offered for their detection. This deplorable and horrible event has caused a profound sensation, and general commiseration for the lamented sufferers and their relatives.

"The explosion [of the United States Bank] has revealed the demoralization of banking, and the villany of human nature. The more we see of it, the more we are satisfied that banking has been reduced to a system of bribery, lying, false-swearing, and actual robbery of the poor and innocent. To say nothing of the thousand stockholders in both worlds, thus reduced to beggary, the famous Girard Fund is also annihilated, and the splendid Girard College will have to remain unfinished, a modern Parthenon in ruins, emblematic of the banking system, and the classic mausoleum to its memory and manes."

"Certainly the United States Bank has been badly, dishonestly, and foolishly managed; but we do not believe there exists a bank throughout the country, that has been conducted on any other principles. *The inherent error is in the system.* It is a system of credulity, mystery, deception, fraud and roguery, from beginning to end. It corrupts the heart—it destroys all principle—and saps the foundation of all honesty in society. The United States Bank has not been a more marked fraud upon the world than any other bank—it is only greater in proportion to its capital. Nicholas Biddle is not a worse man than any other man in Wall street connected with, or administering a system that is concerned in swindling, sin, iniquity, mystery, and midnight robbery."

"The banking system will go down, and all those who hang upon it will soon be looked upon as fit inmates for the state prison. The misery and poverty which have overtaken the poor deluded stockholders of the United States Bank—men, women and children—will assuredly overtake the stockholders of every bank in this or any other country. The explosion of the English banking system will astonish the world one of these days. It will revolutionize that country—as our series of explosions since 1837 have revolutionized this country."—*N. Y. Herald.*

"The Governor of South Carolina has instructed the Attorney General of that state to institute legal proceedings against the banks that have refused compliance with the law amending their charters. Proceedings have accordingly been instituted by the Attorney General to vacate the charters of the recusant banks. These are the Bank of Charleston, the Bank of South Carolina, and the State Bank."

A person employed by the Camden (N. J.) Bank to convey money to Philadelphia has retained $13,000.

McLeod has been brought in custody to the city of New York, upon a writ of *habeas corpus*.

The United States Bank has assigned property of the (nominal) value of 7 millions to trustees to secure the payment of debts due to other banks.

The people of Mallolo, the island of the Fijee group, where Lieut. Underwood and Midshipman Henry, of the exploring squadron, were murdered, were attacked by the crews of the squadron, many killed, and the survivors reduced to complete submission.

"Fanny Elssler is said to have cleared upwards of $65,000 by her visit to the south."

The Ocmulgee (Ga.) Bank "has suffered a protest of its notes, and notice of the protest had been forwarded to the Governor. The effect of this intelligence has been a decline in the value of the notes of the bank, and further information is anxiously awaited."—*Charleston Pat.*

McLeod may be said to be *at large* in New York, being merely attended in his walks by the sheriff. It may therefore be perfectly well understood that his discharge, in some way or other, *is a settled matter.*

The New Orleans Bee mentions another case of "defalcation" in that city. A teller and a book-keeper of one of the banks had taken $75,000, and had absconded.

"The Bank of Chilicothe, Ohio, with specie in its vaults, according to its published statements, of more than double the amount of its circulation, suspended specie payments on the 26th ult. Wherefore, then, the people will ask, does the bank refuse redeeming its notes, when its means so far exceed the demands that would be made by the note holders? The question is fully answered by the mention of the fact that the Fund Commissioners of the state have been authorized to borrow for furnishing the public works, *two and a half millions of dollars!* And that the Bank of Chilicothe has agreed to furnish of this loan, *five hundred and eighty one thousand dollars of their own paper!* Having been so very kind to the state, who would think of holding it culpable for a suspension? Besides, it is now in a fit condition to double the amount of the loan whenever the *interest* of the people may require it. The bank can now strengthen itself by selling one hundred and fifty thousand dollars of specie, at a premium of about *fifteen* per cent., which will make the snug little sum of *twenty thousand five hundred dollars.* But this is only a little spice money. The interest of the loan (so called) at six per cent., would amount to *thirty-four thousand eight hundred and sixty dollars a year.* Who can fail to see the *great benefits* resulting to the community from such a magnanimous system of banking?"

Important news by last night's mail.—The last vetoed Pennsylvania bank-bill has been reconsidered, and *passed* by two-thirds of both houses, (May 4th,) and therefore is now the law. This astonishing result was produced by the sudden change, *at the last pinch*, of votes of a sufficient number of members who had before throughout, and up to the last moment, "*on principle*," opposed this bill, and all such measures. *Very powerful inducements must have been presented to these men to cause so sudden and radical a change of their position.* This *monstrous* law authorizes the continued suspension of specie-payments for five years, *expressly;* and, by certain consequence, though not expressly, the authorized suspension is made in fact perpetual. Perhaps it is all for the best, that the bankrupt banking system should thus be at once brought to its very worst extremes, and that too by the act of a bankrupt government, as that of Pennsylvania was, even before the passage of this ruinous law.

This measure will have most important consequences to Virginia, and indeed all the other states. Our bank men have pronounced, as an unquestionable truth, that whenever the Pennsylvania banks suspend payment, those of Virginia must suspend—and this doctrine has been heretofore acted upon by the banks, the legislature, and the submissive people, in all cases. *If it be true*, (which we altogether deny,) then the banks of Virginia now must also continue non-paying, for five years, or for ever; or rather, (and which will be in a much shorter time,) until the whole system shall sink in its own rottenness, or is wiped off from our laws and our country, because of the still increased iniquity and infamous procedure, which may *now* be expected to follow.

Saturday, May 15, 1841.

The Britannia steam-ship arrived at Boston on May 6th, bringing accounts 12 days later, and to April 20th, of which date we have received our English papers.

No news had been heard of the President steam-ship, and therefore there remains scarcely a possible chance that it has not been lost, with all on board.

From China the news is important. (Date from Macao, Jan. 27.) The British forces had attacked and taken two of the Bogue forts, and attacked and defeated the flotilla of junks. Considerable loss of lives to the Chinese, and scarcely any to the English. Hostilities were stopped in consequence of the annunciation of *peace having been made*. By the terms, the British seem to have gained very little, and much dissatisfaction was felt and expressed. The British are to evacuate the island of Chusan and their other conquests, and to receive $6,000,000 in six years as indemnity, (which the Chinese can raise by imposts on the British trade,) and the island of Hong Kong is surrendered in perpetuity to the British government. The direct official intercourse between the two governments to be on equal terms, and the trade of the port of Canton to be opened as formerly. The future opium trade left unsettled.

We have no doubt that the Chinese authorities consider and will treat this termination of the war as a victory on their part—and that by subsequent management they will make it so in results.

Great excitement prevailed in Philadelphia, amongst the anti-bank men, in consequence of the passage of the bank relief-bill. It was even thought that the persons of "the recreant members" would not be safe, if they were there. One of the features of that bill, and which no doubt greatly aided its passage, is a loan of three millions (*in irredeemable paper*, of course) to the state, by the banks, whose bankruptcy it was necessary thus to protect by law. This loan is to be carried out by the issue of that amount of small notes, which, as "bills of credit," are deemed by some unconstitutional, and an attempt will be made to arrest the operation of the law. Exchange on New York had risen in Philadelphia, from 3½ to 5 per cent., owing to this law, and the expectation of the increased issues of bank paper.

Of this relief law the Philadelphia Ledger speaks thus: "But the last, which has now become a law of the state, is the boldest, most barefaced, impudent specimen of legislative dishonesty of which we have ever heard; and we should not have believed, without witnessing it, that any legislative body, unless consisting of *discharged convicts*, would have had audacity enough for such an experiment upon the burden-bearing patience of the people."—And yet this law is, in effect, to bind Virginia to irredeemable and depreciated paper money, (as the bank-men here maintain,) as much and as long as it does Pennsylvania. We trust that neither Pennsylvania nor Virginia will long submit to this state of things.

Mitchell, the forger, and recent member of congress, has been again arrested in Canada.

The governor of Pennsylvania has pardoned Dr. Dyott, the celebrated banking swindler, and who is accordingly released from the penitentiary. We infer that Gov. Porter gave this pardon on the ground of the gross partiality of the case—Dr. Dyott being punished as a convicted felon, when Messrs. N. Biddle, Cowpersthwaite, and sundry others, who have done much worse, escape unpunished—and when the legislature of Pennsylvania has, by its "bank relief law," just enacted, legalized bank-swindling on the broadest scale, and for an indefinite time.

The negroes condemned in Virginia for crimes, to be transported beyond the limits of the United States, have been heretofore regularly bought from the government, under those stipulations, and bonds given for compliance, and then the negroes sold in Louisiana. We rejoice that one of these systematic violators of obligation has at last been caught in the act, and punished in part, in New Orleans, and we trust that the penalty of his bonds will be fully exacted by the governor of Virginia. Wm. H. Williams had bought, as above, 24 slave convicts, which he carried and sold in Louisiana. He has lost there the value of the slaves, and a fine of $500 for each, and his bonds forfeited to this state will amount to $24,000 more—a justly deserved lesson, which we hope will stop these offences hereafter.

The American squadron in the Mediterranean, under Com. Hull, set sail homeward, in 12 hours after receiving, from England, the recent reports of expected war between that country and the United States, and in consequence of that report; and the Brandywine frigate, which had separated from the others, has arrived alone at New York. This movement was, at least, *being on the alert.*

In Philadelphia efforts are making to push the claims of Commodore Stewart to the presidency. If military services alone, as seems likely, be hereafter counted as the best claims for the chief magistracy, then there is some alleviation of the evil that the field of selection shall be extended, by including the naval as well as the land service.

The National Intelligencer, which may be now considered as the organ of the administration, sums up as follows the measures expected to occupy the deliberations of the approaching extra session of congress:

"1. The distribution of the proceeds of the sales of public lands among the several states.

2. A revision and augmentation of the duties on imports, for the purpose of securing from that source a revenue adequate to the wants of the government.

3. The repeal of the sub-treasury law.

4. The establishment of a fiscal agent, central or other, to aid the government in collecting and disbursing the revenue and equalizing the currency. [In plain English, a *national bank*.]

5. A temporary loan, if necessary, to supply the immediate necessities of the Treasury."

"*A Model Republic.*—Connecticut presents a republic which secures more good and avoids more evil than any other political community of ancient or modern times. All the public statutes, after two hundred years' legislation, are contained in a single volume; the annual expenses do not exceed $80,000; the state owes nothing, possesses a school fund of more than $2,000,000 well invested, yielding an annual income of $113,000, is without disbursements or superintendence of public works, employs but few offices, and yet enjoys the security of law and the administration of justice as economically as any other state in the union."—*Nat. Int.*

The perpetrators of the recent horrible murders and arson at St. Louis, have been discovered. They were three free negroes, and a slave who was permitted to go at large, as if free. The slave (Madison) told the circumstances to another companion, (who has since, and much too tardily, given the information,) before the flames had burst out of the house. The murderers had all gone off, in different steamers, before being suspected; but two of them have since been arrested, and the others cannot long escape the hot pursuit. Their sole object was plunder, in which the villains entirely failed—having been unable to enter the iron chest, after being in complete possession of the house.

A plan is in progress for establishing an American line of steam-packets of the largest size, to sail between New York and England, and by arrangements expected to be made between the proprietors and our government, these vessels are to be converted to steam frigates, whenever war occurs. The National Intelligencer says, "that contracts for building two of the

steamers have been signed, and the building is about to be commenced at New York. The ships are to be 2,500 tons each, and 300 feet long. Each is to have two engines of 400 horse-power—equivalent to 1,040 horse-power by English computation. The two are to be finished in 18 months, and then the other two will be commenced.

The great steam frigate Mississippi, built by the government at Philadelphia, was lately launched.

A very destructive fire occurred at St. Louis on the 3d. Also a fire in New York, (of buildings erected on the formerly burnt district,) of which the loss is more than $300,000.

The premium paid in Petersburg for exchange on New York has gradually risen from 4 to 5¾ per cent., which is the present price. This is an indication of the growing depreciation of the paper money of our banks.

From January 1, 1841, to April 1, the outstanding debts of the Farmers' Bank of Virginia, (that is, the amount due from all borrowers,) was *increased* $148,342 by the amount of new loans exceeding all payments of previous debts!!! In the same time its stock of specie was *diminished* by $22,051. No wonder that the bank authorities can boast of having made net profits during that time at the rate of 10 per cent. per annum. *Query.* At this rate of "*curtailing*" its discounts, and of *reducing* its liabilities, when will this bank be able to *resume* specie payments?

It is given out and understood that the Bank of Virginia will declare a dividend in July. If so, we presume that it will be out of the capital stock. This has been a mode of sustaining the credit of many banks and other joint stock companies.

"We have been shown a fine specimen of coal, recently found in the neighborhood of Scotland Neck, Halifax County, which very much resembles the anthracite, and to all appearance would burn equally as well. There are indications, it is said, of an extensive coal formation where this specimen was found, which will, no doubt, be thoroughly explored.'"—*Raleigh (N. C.) Register.*

"The recent appalling overdrafts at the State Bank have excited an investigation at the Bank of Louisiana, by which it is found that about $80,000, some say $100,000 are found missing. The search was first induced by the Cashier, Mr. Leverich, when it was found that Mr. Collson, who is said to have been overdrawn $20,000 at the State Bank, was the discount clerk at the Bank of Louisiana. We are not able to say if any discrepancy occurs in Mr. C.'s books, but it is certain that he and the receiving teller of the Bank of Louisiana have absconded. The latter has pocketed, it is stated, about $80,000, received in two deposites on Friday and Saturday last."—*N. O. Crescent City.*

A report that the President steam-ship had gone to Madeira has been put in circulation, but on such very slight grounds of probability that we did not think it worth mentioning; and would not now, except that other papers, in publishing the report and its very insufficient grounds, express the opinion that "these facts seem to justify a belief that the steam-ship is safe."

Saturday, May 22, 1841.

Another, and the greatest outrage of the kind, has been committed, by a British cruiser on the brig A. E., of Baltimore. She was taken possession of by an armed boat's crew from the British brig of war Persian; and by the crew of the boat, and by the Persian, kept 19 days, during which time her cargo was ransacked, provisions consumed, and goods destroyed, without regard to the rights, or the papers, of the American vessel, and more like pirates, than naval officers of a friendly power. At last, after this detention and spoliation, the American vessel was released. It is remarkable, that in all the sundry recent cases of unlawful search or capture, not one of the American vessels was found to be justly obnoxious to the suspicion which formed the pretext for the outrage. And, even if actually they had been slavers, *that* would be for *our* government to punish, and the British government has no right of search in any case, of American vessels. This course of outrage on our rights *must* be stopped.

The former province of Yucatan, which not long since threw off the connexion with Mexico, has formed a republican constitution and established a regular and independent government.

The Philadelphia Ledger of the 18th says—"The prospect of the payment of the interest due in July by the three states of Pennsylvania, Illinois and Indiana, is sufficiently doubtful. Mississippi and Florida of course cannot pay. In Pennsylvania, some of the banks of the interior have accepted the provisions of the relief bill, and already issued the small notes which it authorizes. The city banks have not accepted it, and probably will not; the Bank of Philadelphia has rejected it decidedly."—This "relief law" must be even worse than we had supposed, when the banks themselves reject the almost unlimited power which the law offers to them to defraud the public by irredeemable issues.

"Commodore T. Ap C. Jones has been appointed to the command of the Pacific squadron, and will hoist his flag on board the United States ship Independence."

"It is stated in the Charleston Patriot, as proving the honorable character of the merchants of that city, that the whole sum put in suit by the collector of that port, during a period of twenty-one years, is but twenty-nine dollars and seventeen cents."

Mitchell the forger, and late M. C., has been brought from Canada to the city of New York in irons, and committed to jail.

"Mississippi will not be represented at the extra session of Congress. Gov. McNutt has declined calling an extra session of the Legislature for the purpose of appointing a period for the election, and does not consider himself authorized to order an electon without the intervention of the Legislature."—*Phil. Led.*

"Five Portuguese slavers, with upwards of one thousand slaves on board, were taken into St. Helena on the 26th of March, having been captured on the west coast of Africa, by the British naval force on that station."—*Ib.*

"Mr. Barker, the cashier of the Branch Bank of the state of Georgia, is reported to have decamped with $73,000 of the bank's money."

The Alabama legislature has passed an act sanctioning the suspension of payments *indefinitely* by the banks of that state.

The authorities of the branch Exchange Bank of Petersburg deserve to have credit for a most wonderful improvement in their execution, in the *endorsing* of their bank notes, (when compelled thus to make them bear interest,) since we reported the *very remarkable* manner in which they first performed this unpleasant requirement of the new law. In all the subsequent cases of demand by holders of their notes, the endorsements have been written (very differently from the first) *quite legibly*, and in *good black ink*, and moreover on the *backs of the notes*; and therefore required no printed label of explanation, or evidence of the obligation, as at the first essay. The authorities shall not want for enough practice to keep them up to this very commendable mark of improvement. We hope that every bank in Virginia will be compelled thus to mark their own dishonoring of their

notes; and, small as is the pecuniary penalty thus imposed, if many anti-bank farmers would enforce it, every such endorsed note which they would carry home would be a striking exposure of, and both a standing and a current argument against the continued sufferance of a rotten and irresponsible banking system. But the more outrageous the course of the banks, in all matters of violation of legal or moral obligation, and even of regard to common decency of conduct, the bett›r *we* shall be pleased. We fully believe that it is only by the full and complete exposure by the banks themselves of the fraudulent principles and iniquity of the existing banking system, that the people can be roused to its destruction. The banks have certainly been given "rope enough to hang themselves," both by the laws and the toleration of the cheated and pillaged people; and we rejoice that they are using their ample privileges in the surest manner for their own destruction.

At an adjourned meeting of the stockholders of the United States Bank, resolutions strongly condemnatory of the former administration of the bank, and implying the expenditure of immense sums for purposes of corruption, were offered by Mr. Duane, and adopted by the meeting. From the supplementary report to the meeting, of the committee of investigation, it appears that more than a million of dollars had been spent and are unaccounted for—the vouchers having been passed without being read, and then burnt!!! The United States Bank has accepted the benefit of the "relief law."

A writer in a Richmond paper of the 20th, in reference to the bank notes of $1 and $2, (which only the banks are now compelled to pay,) complains bitterly that some holders of such notes "have claimed their *legal* right, and demanded specie to the amount of several hundred dollars at one time, stickling for *the pound of flesh nearest the heart*, to the last. *That the avaricious appetite of man should be so keen, is humiliating*," &c.—and then the writer (no doubt a bank debtor, or a bank officer,) goes on to threaten that the banks hereafter "will be very cautious in their issues" of small notes, if thus compelled to pay them. What a monstrous perversion of language and ridiculous misapplication of terms, as to the *cheating banks* and the *cheated note-holders* and *creditors* of the banks! How much must the moral sense and intellect of a community have been poisoned by being *bank-drugged*, if such representations as this receive any respect or countenance!! And how *miserably weak*, and yet *reckless* and *desperate* must be the banks that can make such an appeal as this to public prejudice and favor, to shield them from paying a few hundred $1 and $2 notes!!!

By mails of last night.—The legislature of New York have passed an act appropriating $3,000,000 to three canals, of which, $2,150,000 is directed to enlarging the Erie canal.

The Rochester arrived from England at New York on the 19th, bringing accounts two days later. No news of the President steam-ship. No other accounts yet published.

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